

Bul. No. 52445

APPLICATIONS

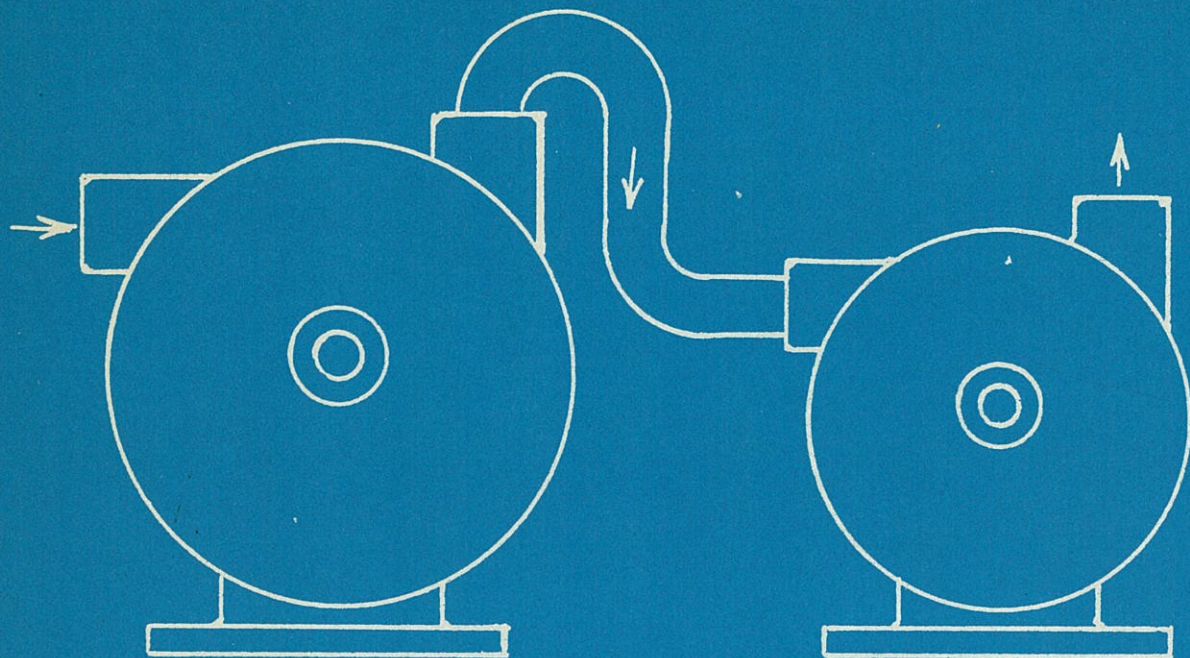
LEIMAN BROS.
ROTARY VACUUM PRESSURE
GAS PUMP and AIR MOTOR

LEIMAN BROS. INC
146-181 Christie Street
Newark 5, N. J.

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PUMP APPLICATIONS

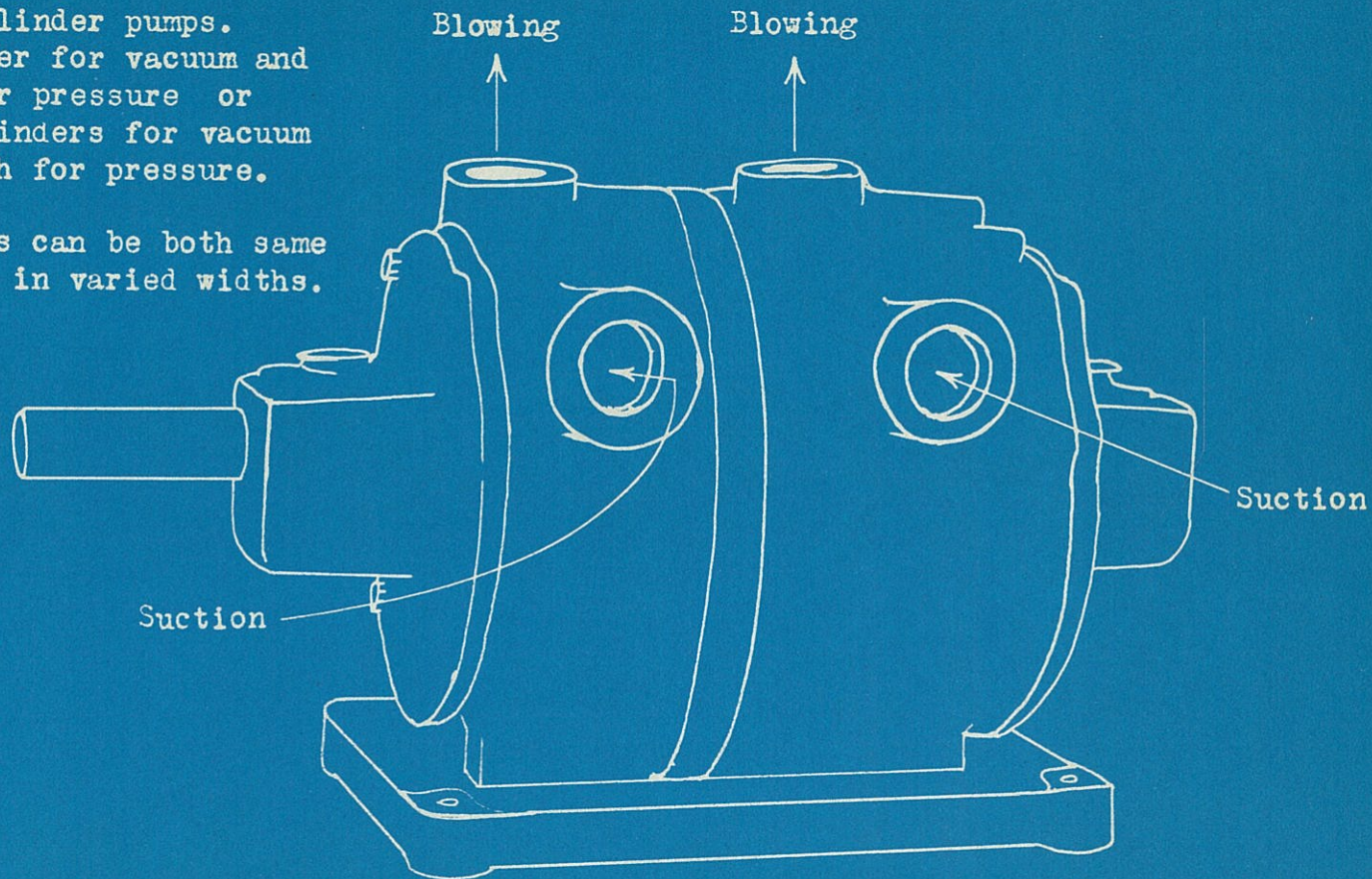
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| | | Gathering mach. | | | |



Two stage hook-up of pumps for higher degrees of vacuum or pressure without the usual strain or heating with single pumps alone.

2 cylinder pumps.
1 cylinder for vacuum and
1 for pressure or
both cylinders for vacuum
or both for pressure.

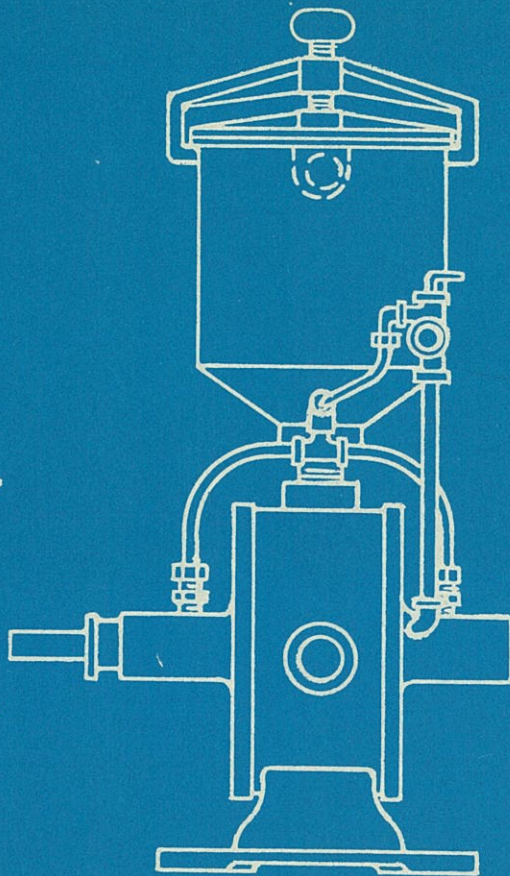
Cylinders can be both same
width or in varied widths.

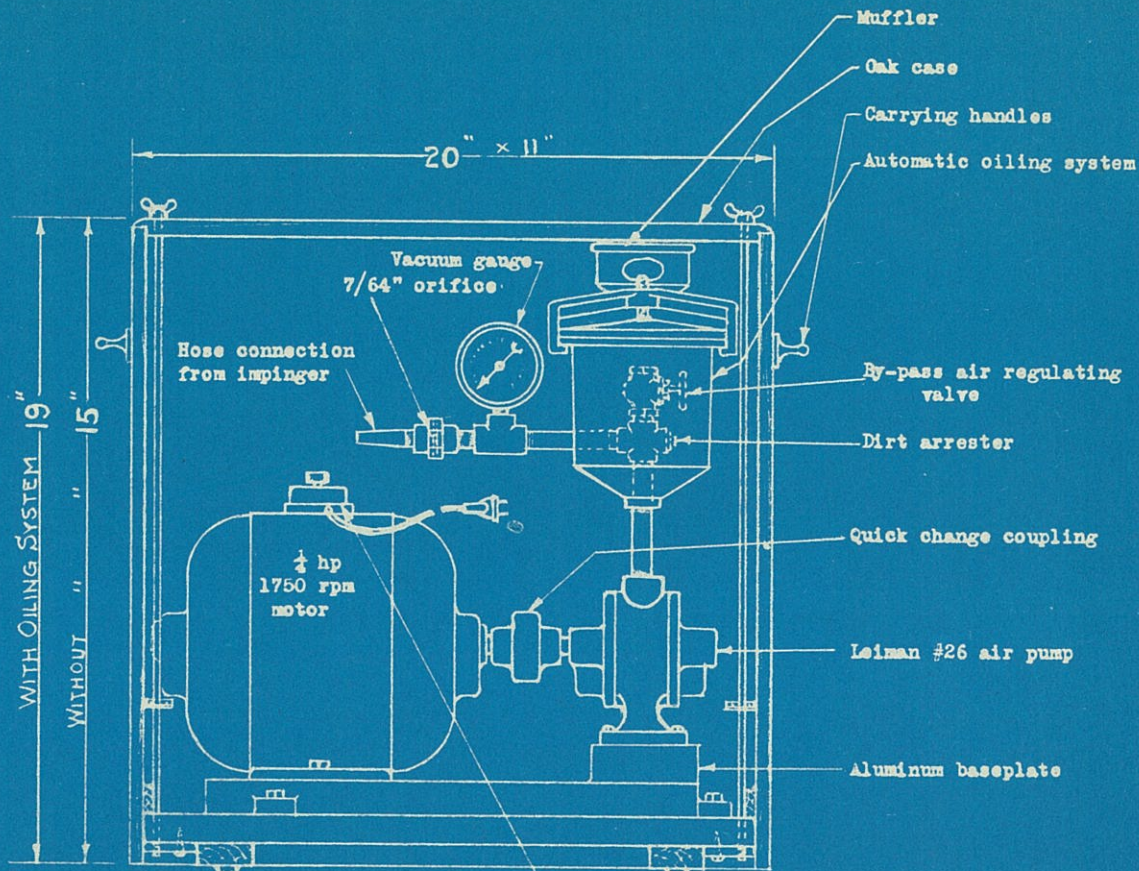


Automatic
oiling system
for vacuum pumps
to lubricate the
cylinder or the
bearings or both
at once.

Uses the oil over
and over again
continuously.

Starts and stops
with pump action.

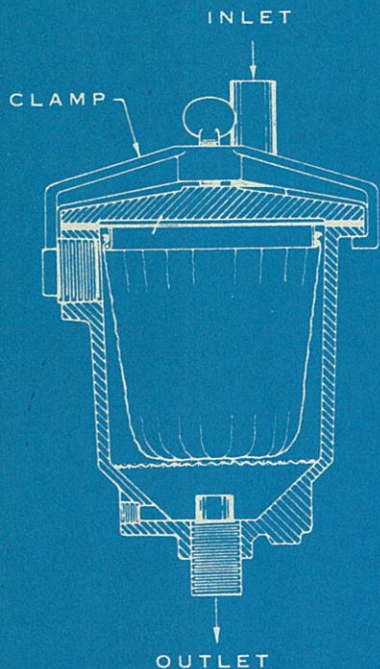




Quick voltage change switch
to change from 110 to 220
volts on A.C. motor

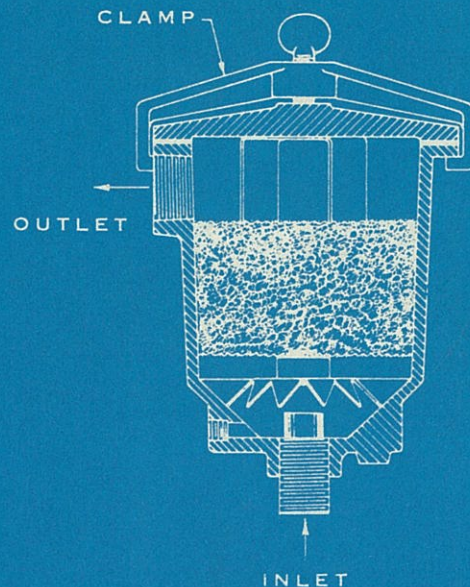
Portable pump unit for easy handling or transportation
for
Pressure or vacuum testing of all types.

AIR FILTER



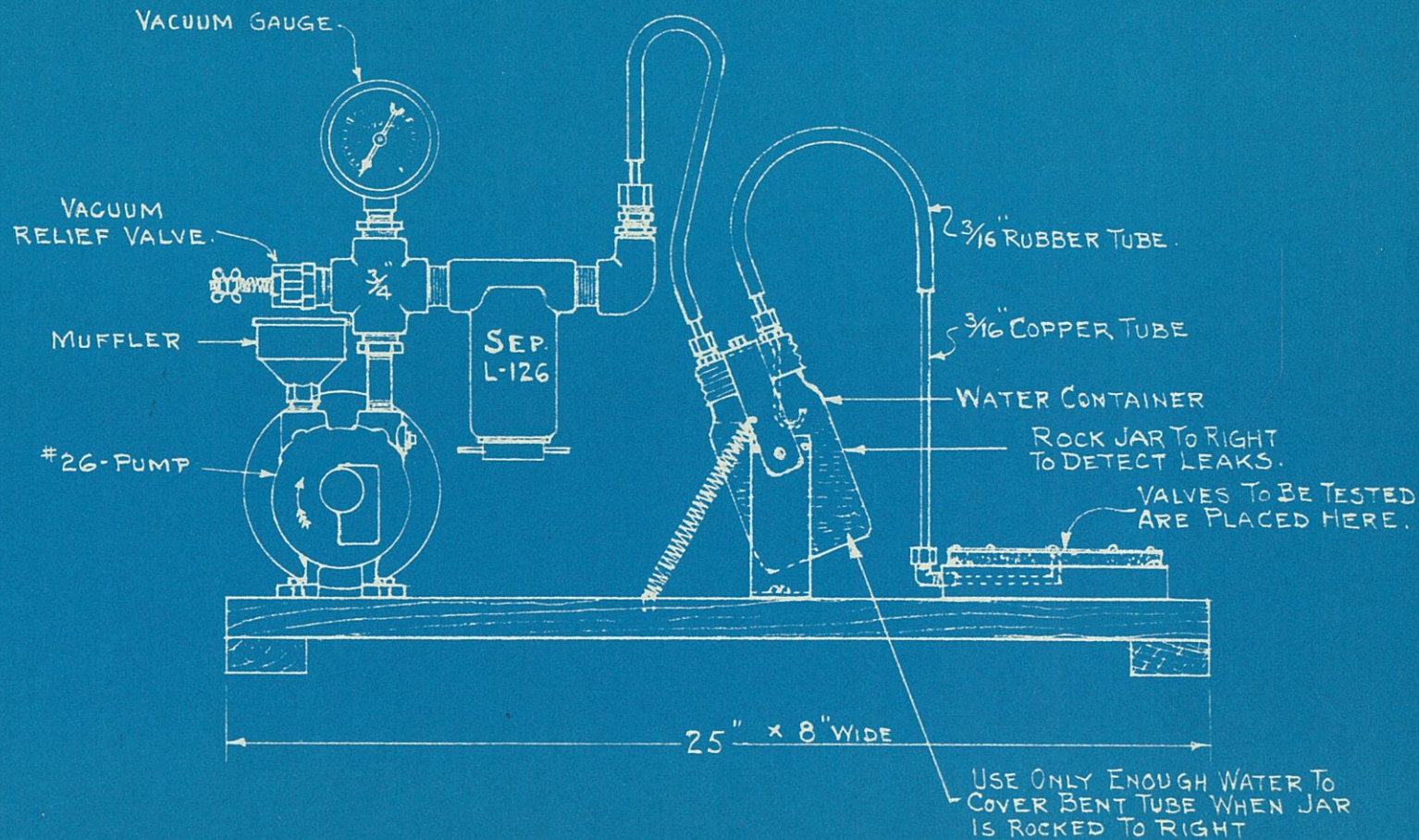
This is used at the inlet or vacuum side of air pumps to clean the air before it enters the pump.

OIL SEPARATOR



This is used on the outlet or pressure side of pumps to absorb the oil which is carried along with the air from the pump.

TESTING MACHINE FOR VALVES AND COCKS



PAPER AND SHEET FEEDER

Automatic valve. Closes when vacuum is required at suction foot to lift paper & opens when paper is to be released.

Special design suction foot. Usually rubber.



Blowing nozzle, floats top sheets.

Automatic valve

Leiman Bros. oil separator prevents oil from blowing onto paper.

Leiman Bros. vacuum relief valve. Keeps vacuum under control.

Leiman pressure relief valve

Lubricator.

Leiman Bros. Air Pump

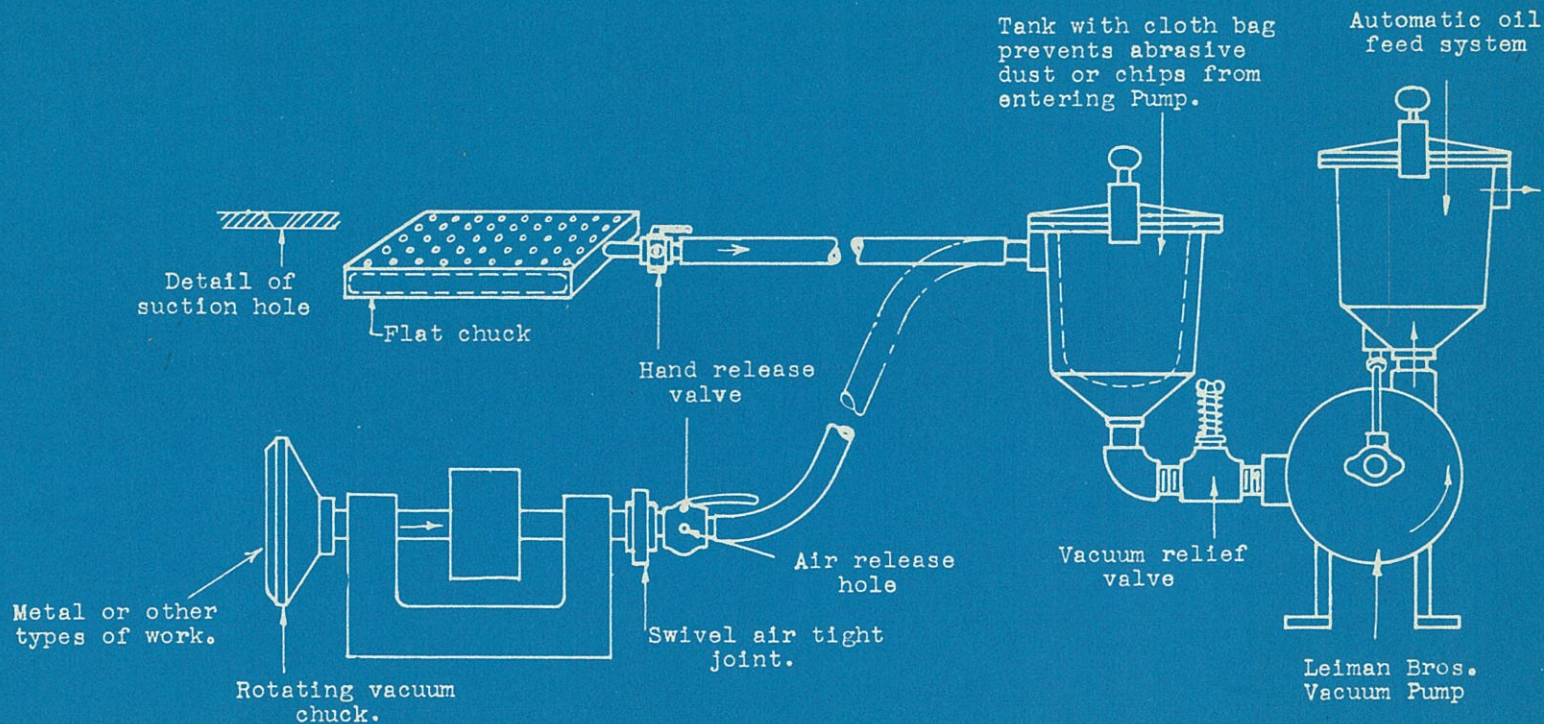
Leiman dust separator keeps dust from entering pump.

Drain cock

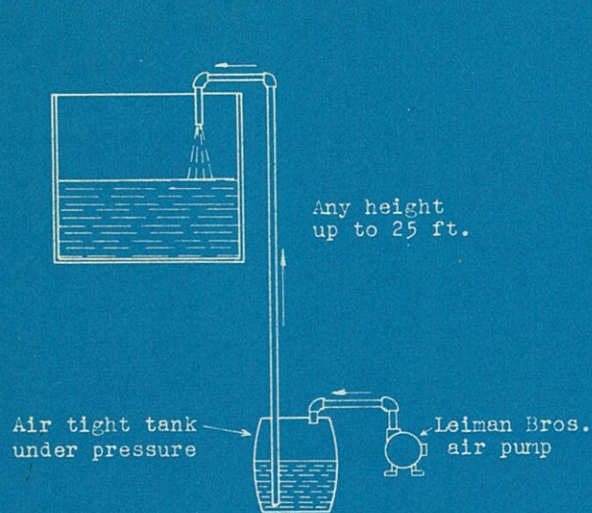
Can be set in blowing line.

Air storage tank

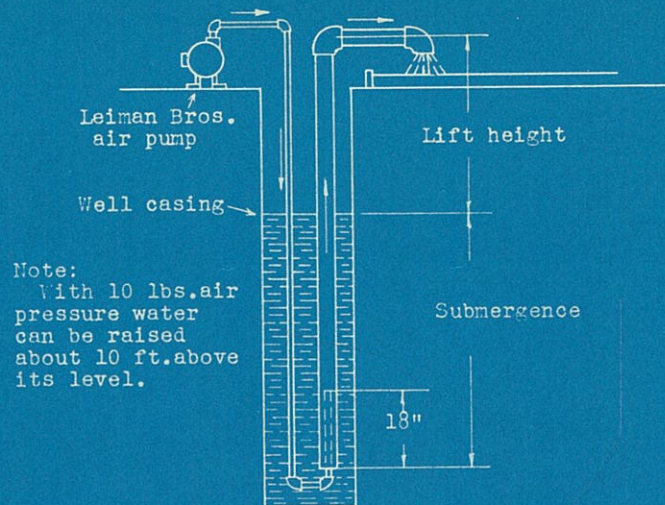
VACUUM CHUCKING AND HOLDING



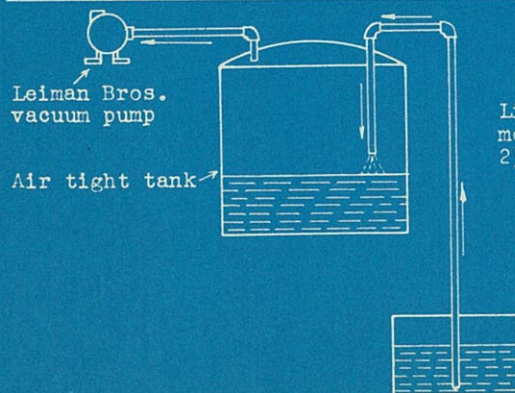
METHODS OF LIFTING LIQUIDS BY AIR.



LIFTING LIQUID BY PRESSURE

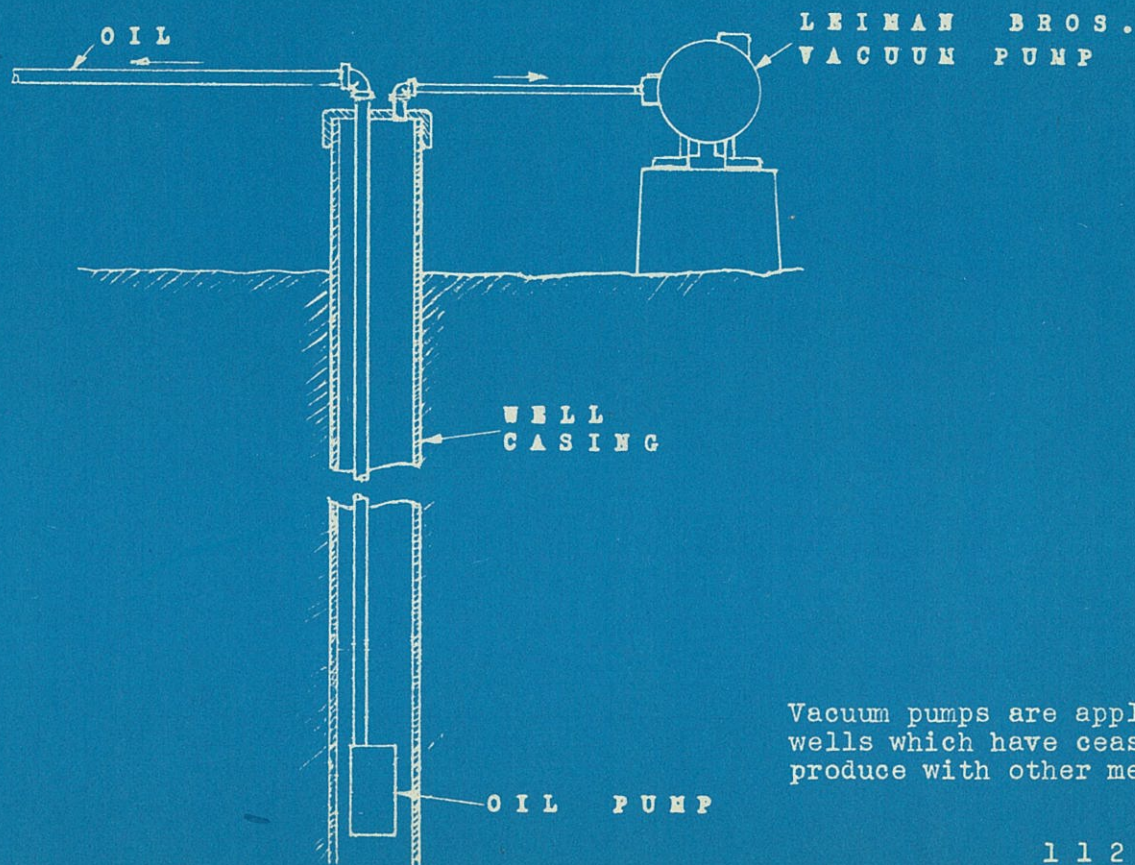


LIFTING LIQUID BY PRESSURE



LIFTING LIQUID BY VACUUM

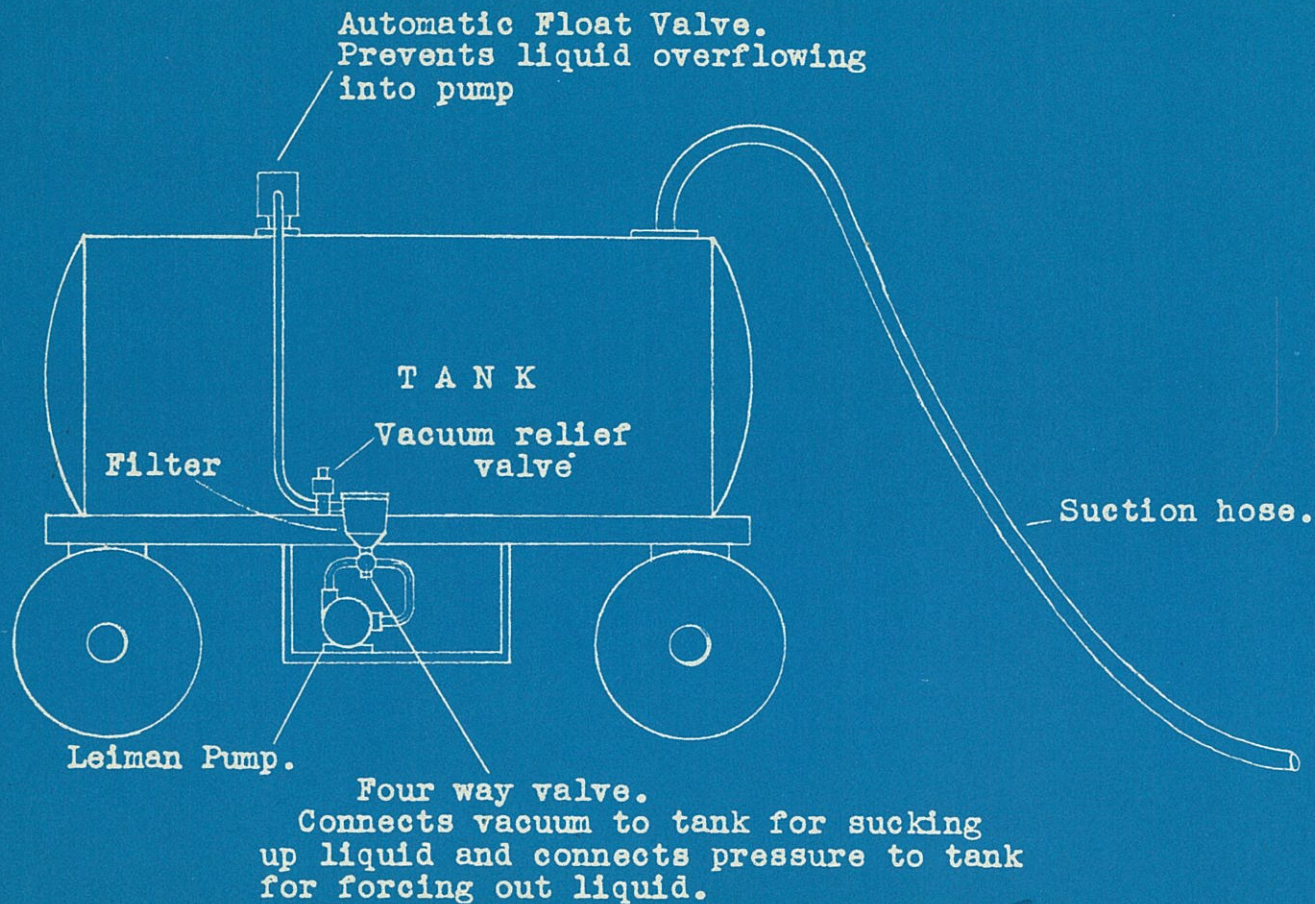
Vacuum Pump Applied to Oil Well



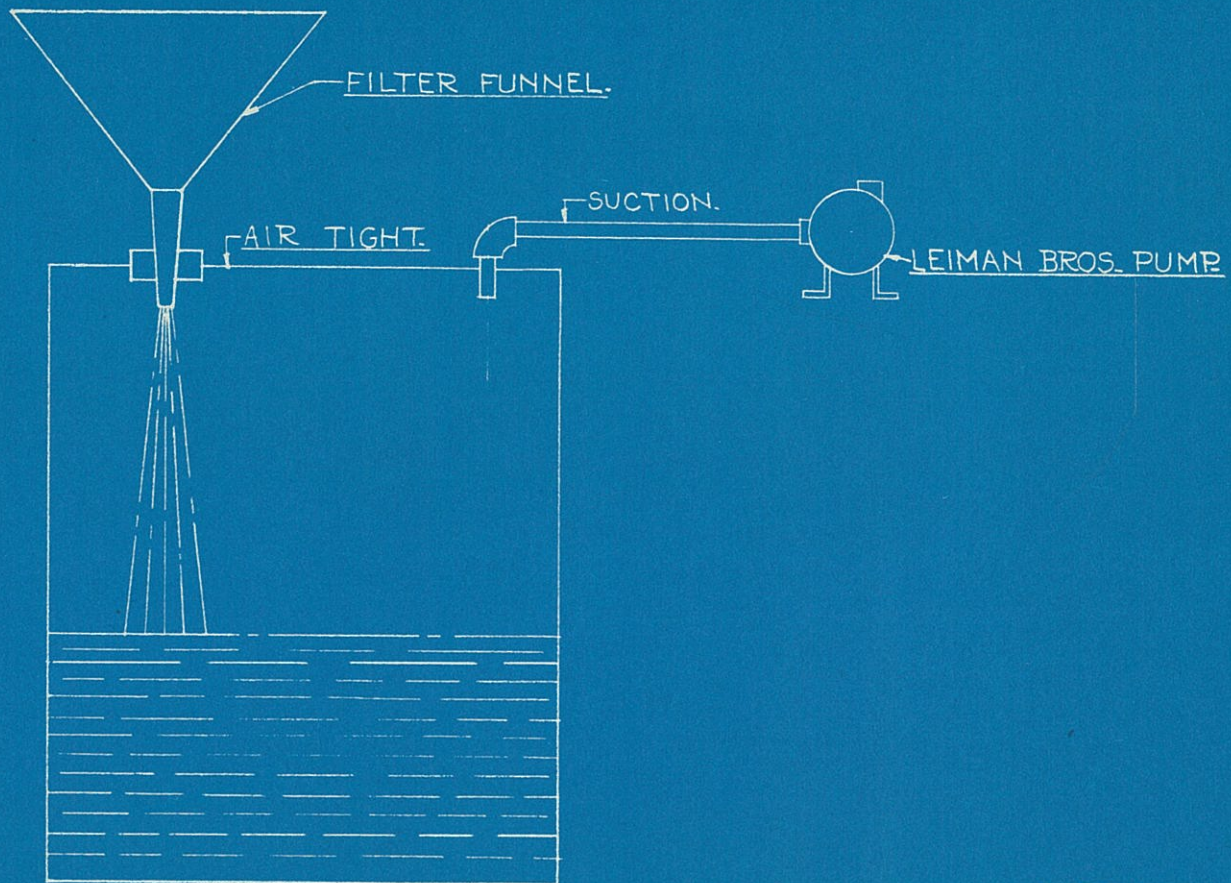
Vacuum pumps are applied to wells which have ceased to produce with other means

1128 - C

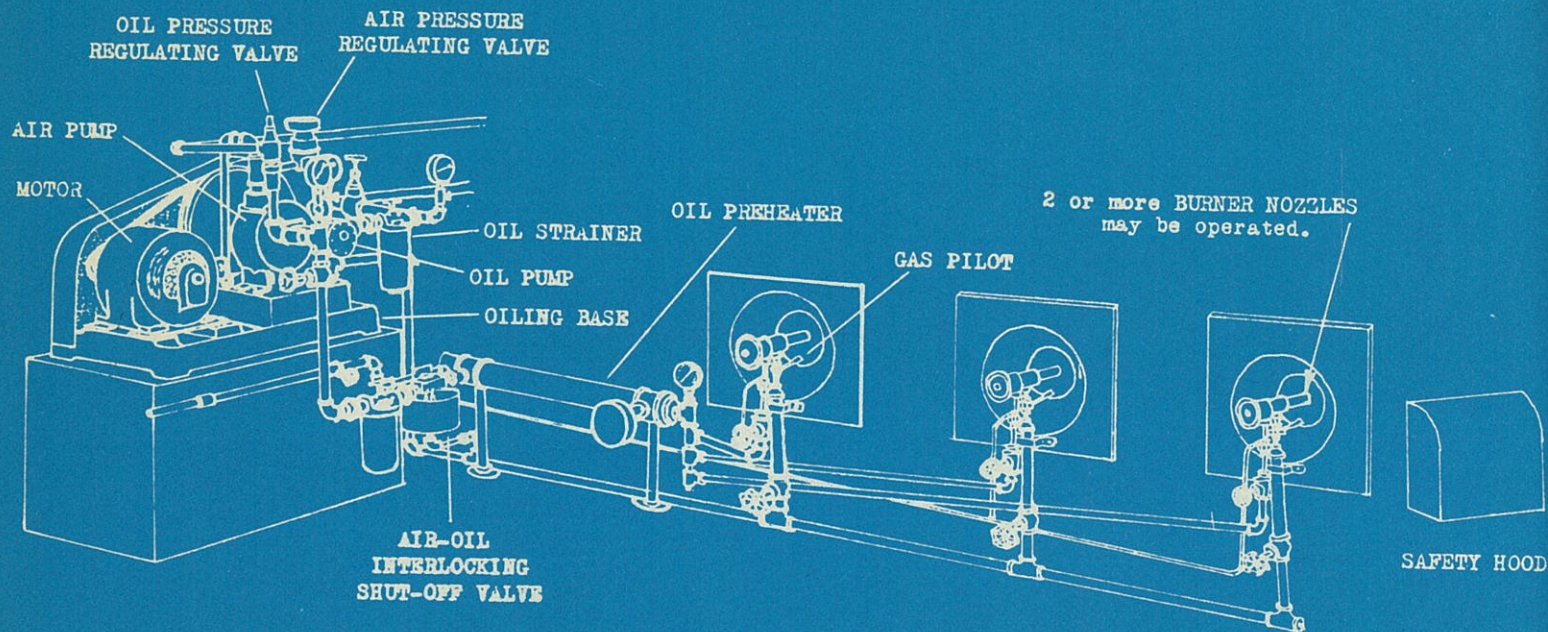
TRANSFERRING LIQUIDS AND CHEMICALS



VACUUM FILTERING

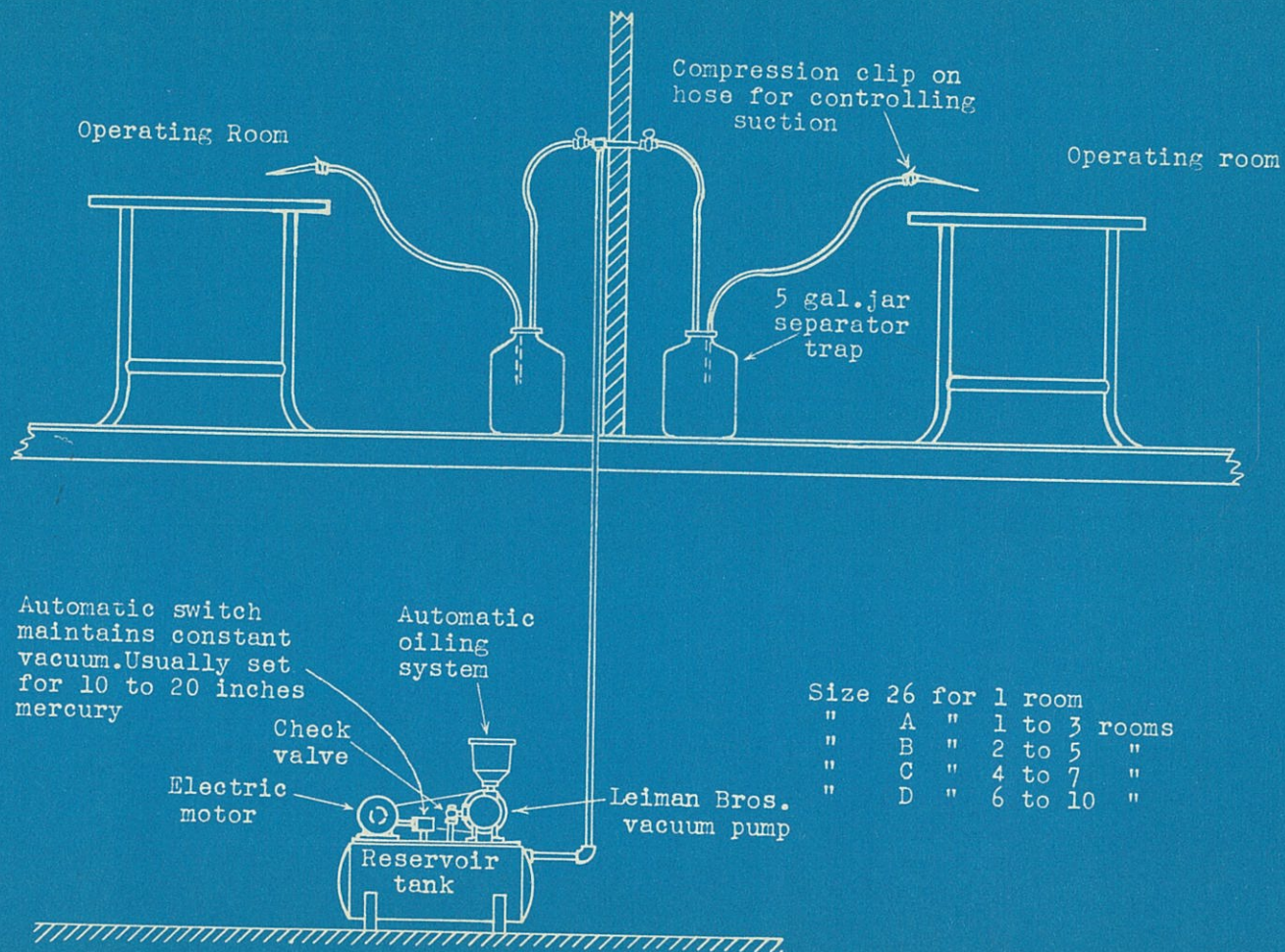


FUEL OIL BURNER OUTFIT

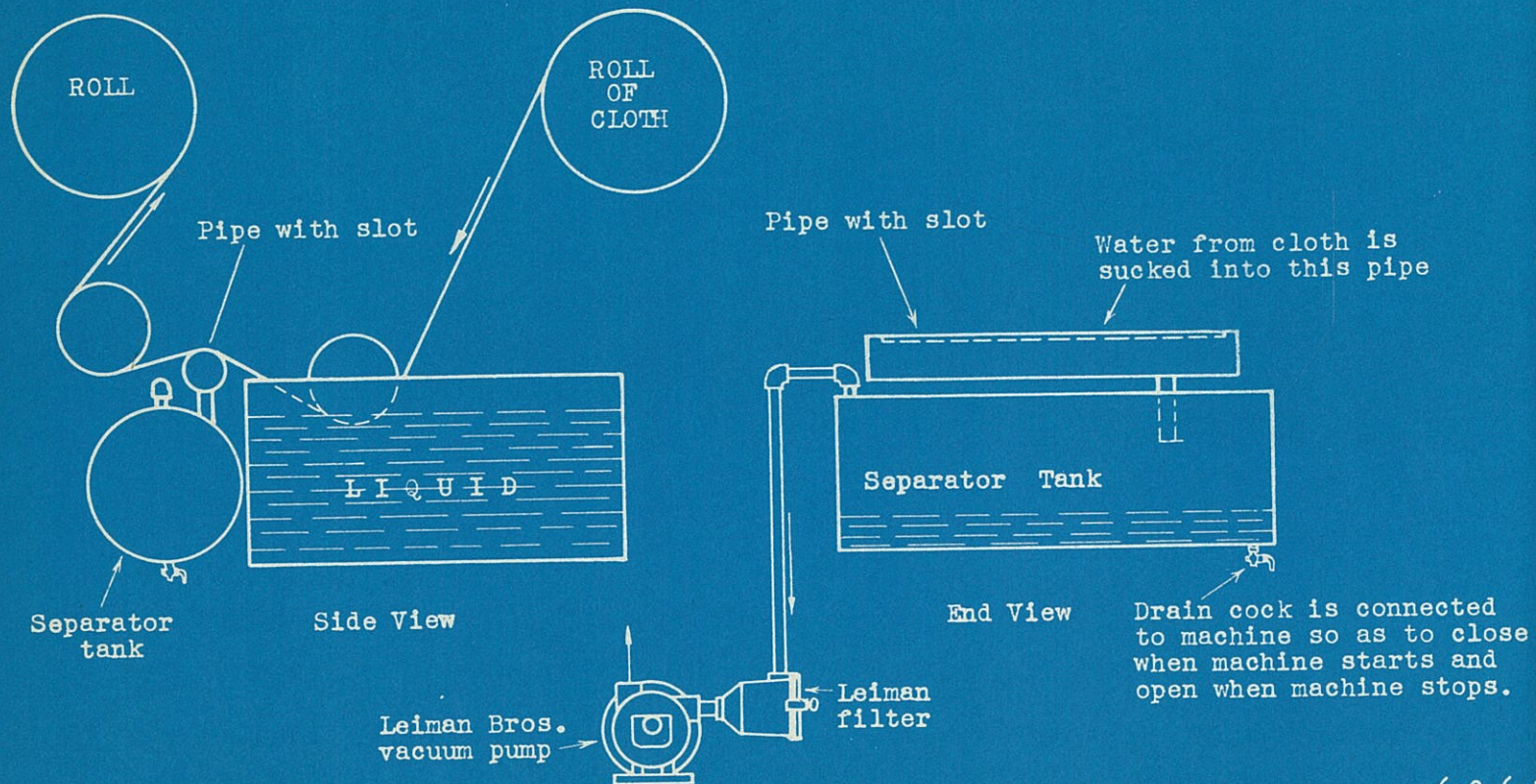


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VACUUM OUTFIT FOR SURGICAL OPERATING TABLES.



EXTRACTING LIQUID FROM CLOTH

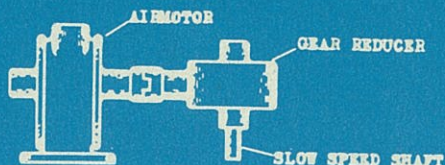


AIRMOTORS.



Air Motor showing application of propeller and extension shaft for agitation work

FIG. 2144-A



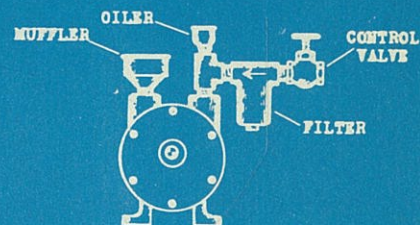
Application of Air Motor for slow speed combined with high torque

FIG. 2144-B



Showing method used for two way rotation (Lettered size Motors not reversible)

FIG. 2144-C

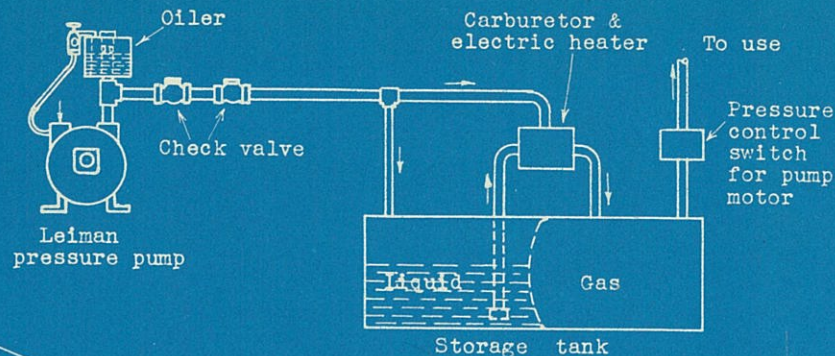


Air Motor showing various accessories which might be used

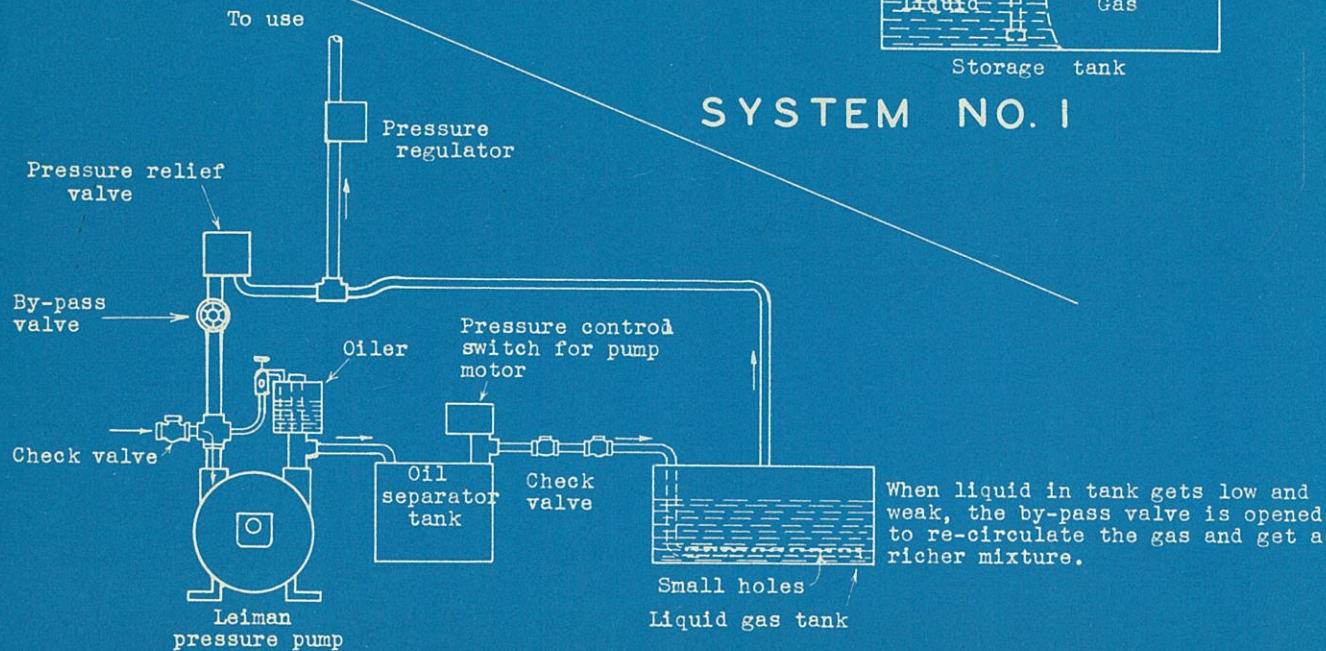
FIG. 2144-D

GAS GENERATING SYSTEMS.

For generating gas for cooking from high-test gasoline.



SYSTEM NO. 1



SYSTEM NO. 2

GLASS TUBE BENDING.

for Neon sign manufacture, etc.

Air at low pressure is supplied to mix with gas for blow torches.
A uniform gas pressure is maintained by a Leiman gas pump.

SIZE OF PUMP
REQUIRED FOR SHOP

| No. of Men | Size of Air Blower | Size of Gas Pump |
|------------|--------------------|------------------|
| 1 | #B | #26 |
| 2 | C | #A |
| 3 | D | B |
| 7 or 8 | E | C |

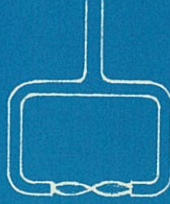
6" (4½ cfm. air)
12" (9 " ")
16" (12 " ")



RIBBON BURNER



BLOW TORCH



CROSS TORCH

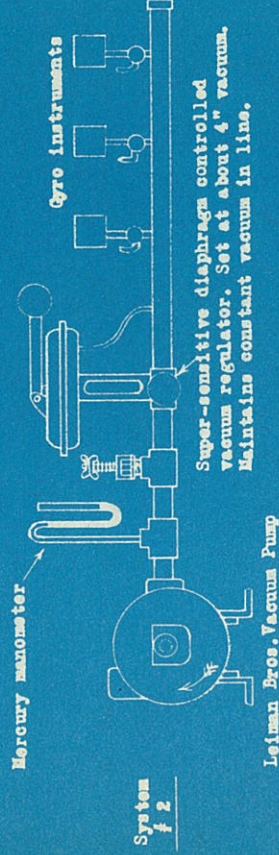
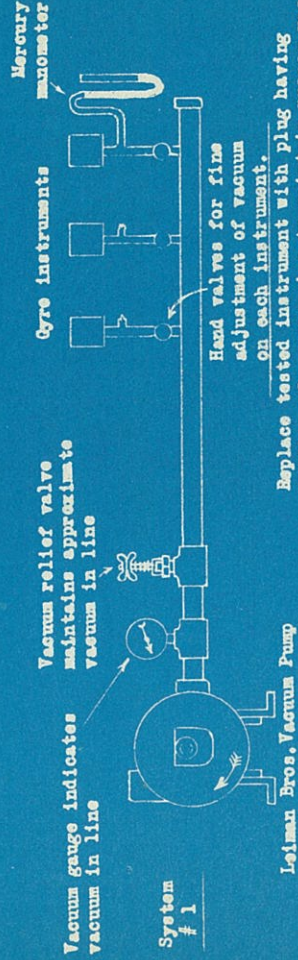


CROSS FIRES (1½ cfm. air)

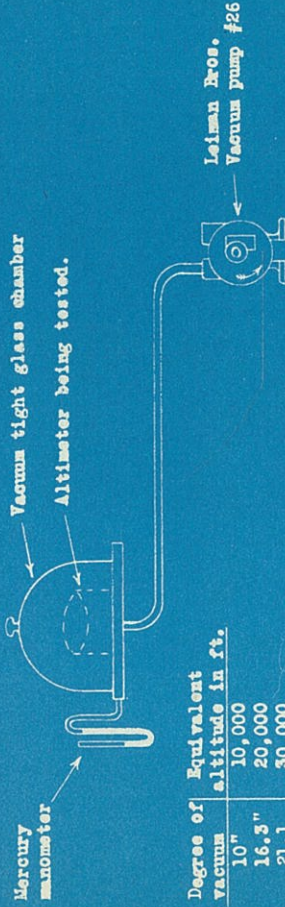
AIRPLANE INSTRUMENT TESTING

For testing Sperry Directional Gyros, Automatic Pilots and Artificial Horizon Instruments with Leiman Bros. vacuum pumps. These instruments obtain their motive power from the turbine or paddle wheel built in them.
Automatic Pilot requires about 5 C.F.M. and other instruments about 2 c.f.m.
About 4 inches mercury vacuum is required.

| Size of vacuum pump required | 26 | A | B | C | D | E |
|--|----|---|---|---|----|----|
| Approx. number of instruments that can be tested at one time | 1 | 2 | 4 | 7 | 12 | 20 |

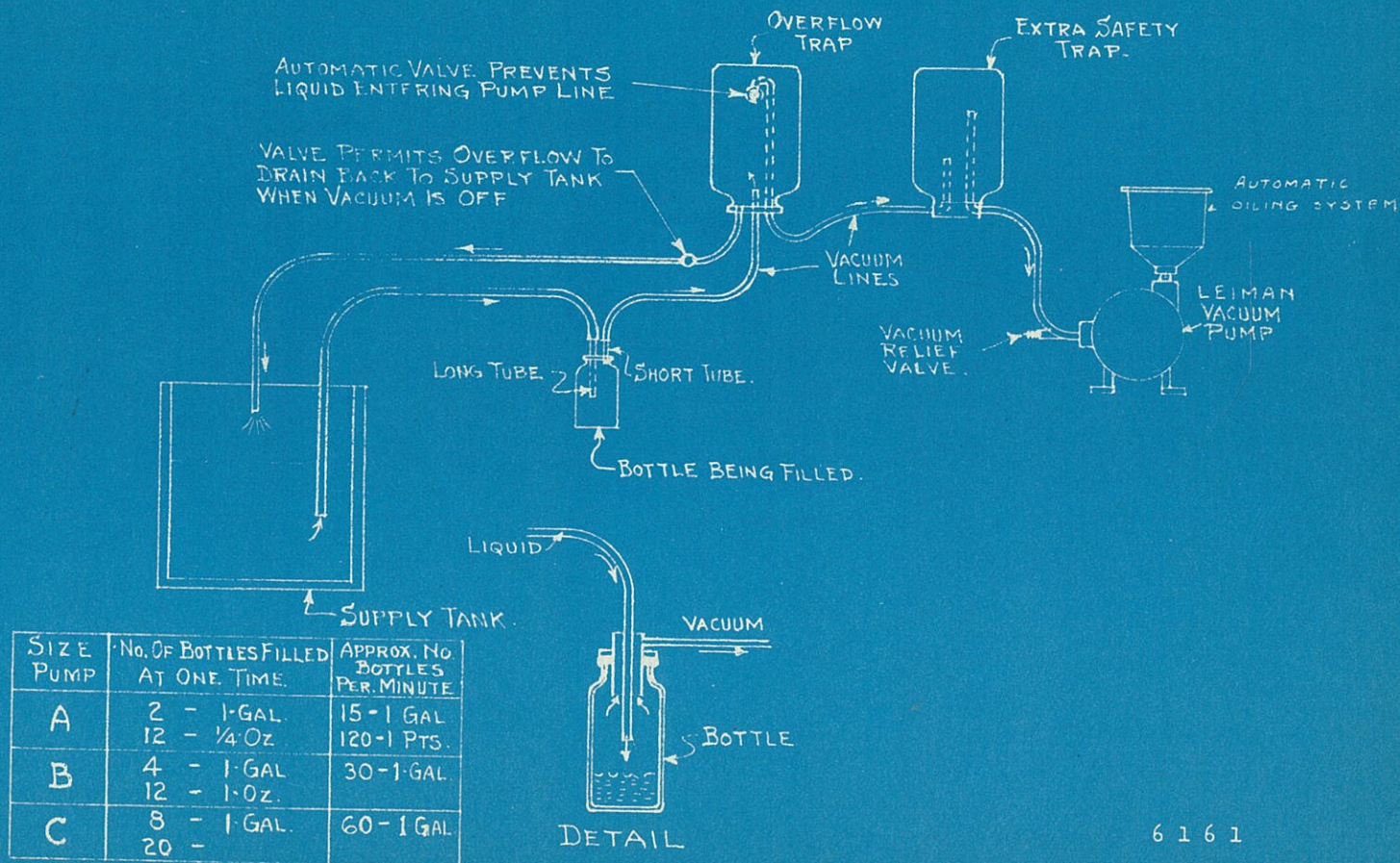


Altimeter Testing

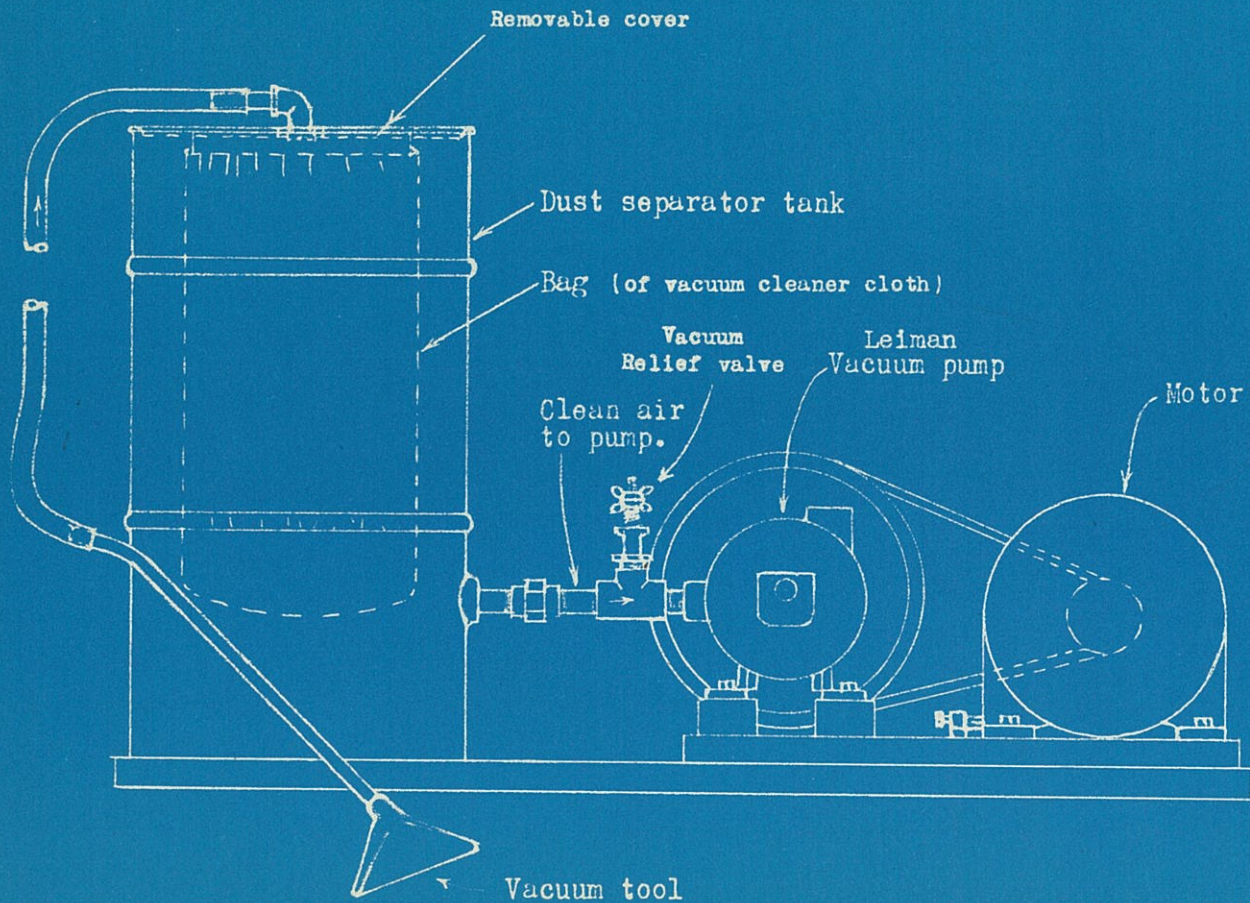


| Degree of Vacuum | Equivalent altitude in ft. |
|------------------|----------------------------|
| 10" | 10,000 |
| 16.3" | 20,000 |
| 21.1" | 30,000 |
| 24.5" | 40,000 |
| 26.5" | 50,000 |

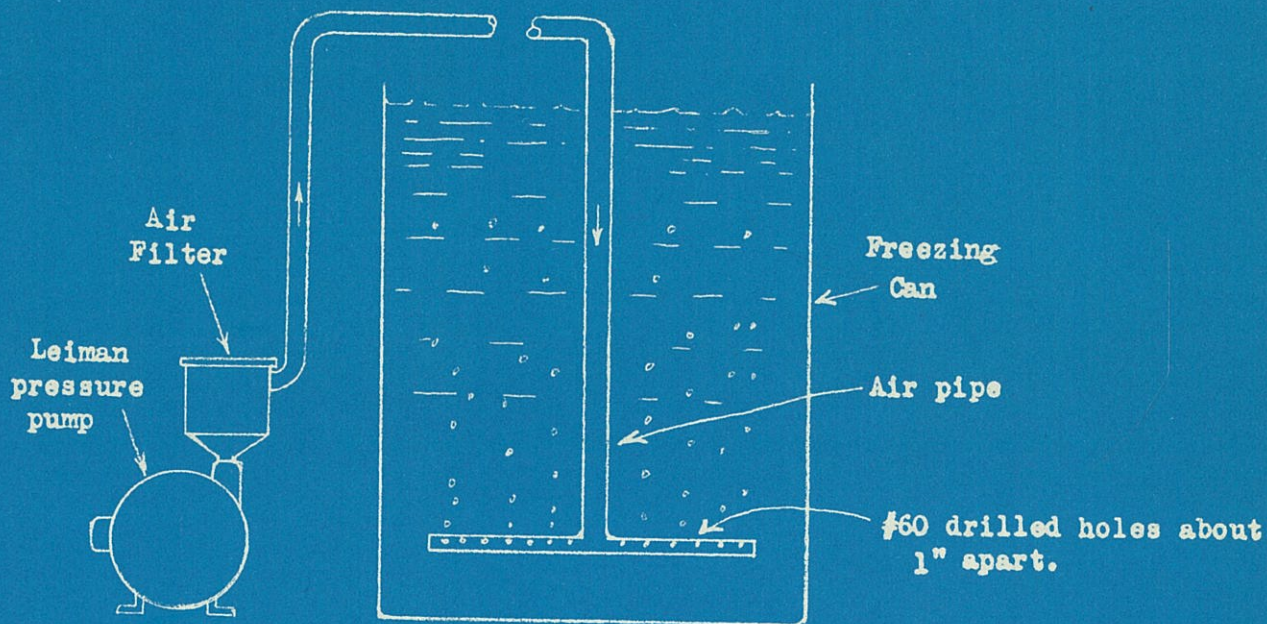
VACUUM BOTTLE FILLER.



V A C U U M C L E A N E R U N I T .

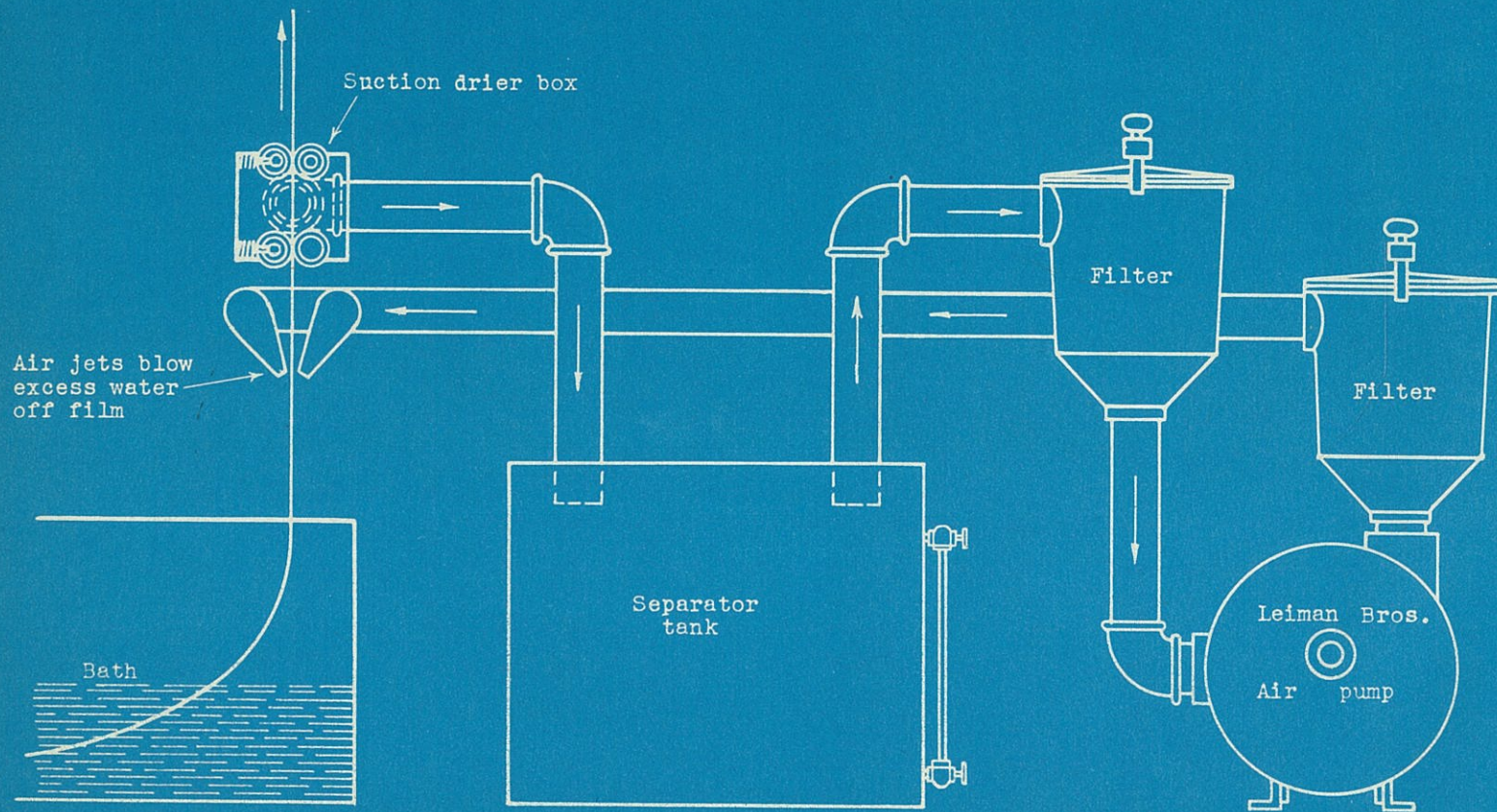


AIR AGITATION FOR ICE MAKING.

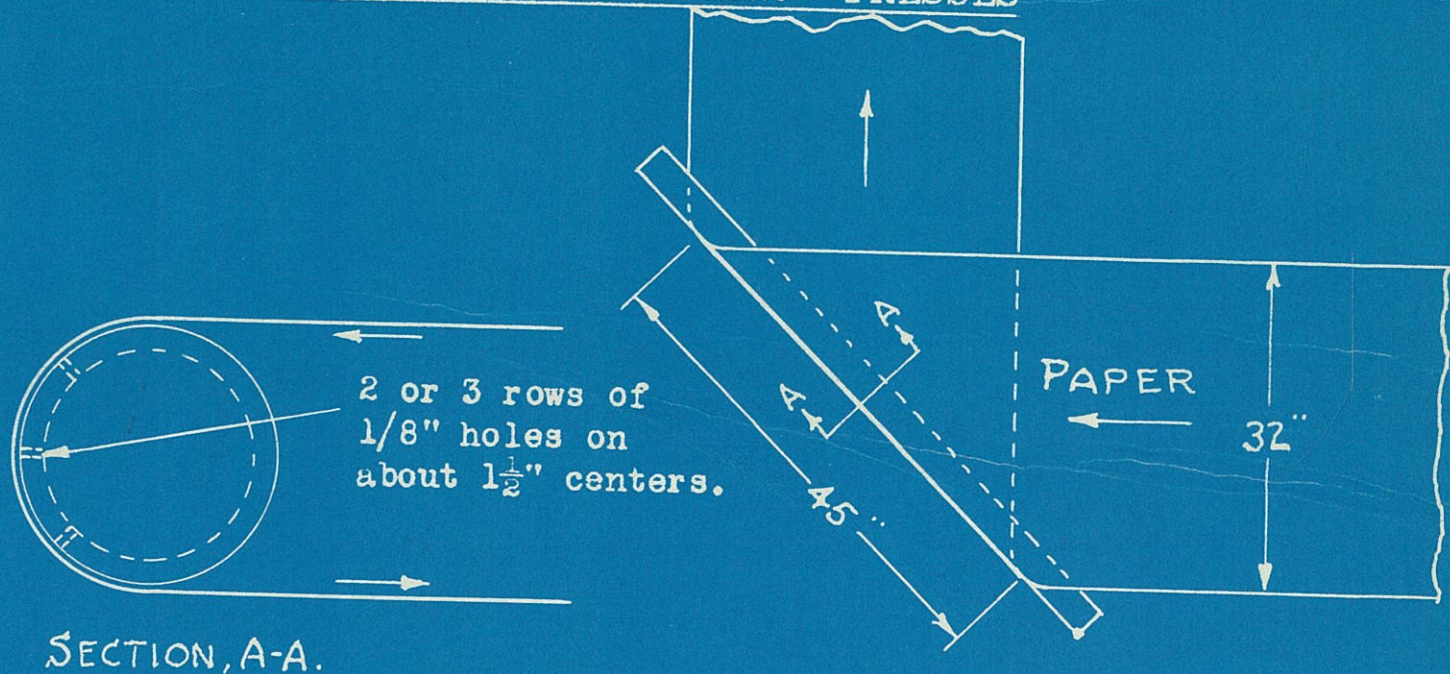


The water is kept agitated until the temperature is brought down to the freezing point. This causes solidification throuhout the entire mass at the same time.

MOTION PICTURE FILM DRYING

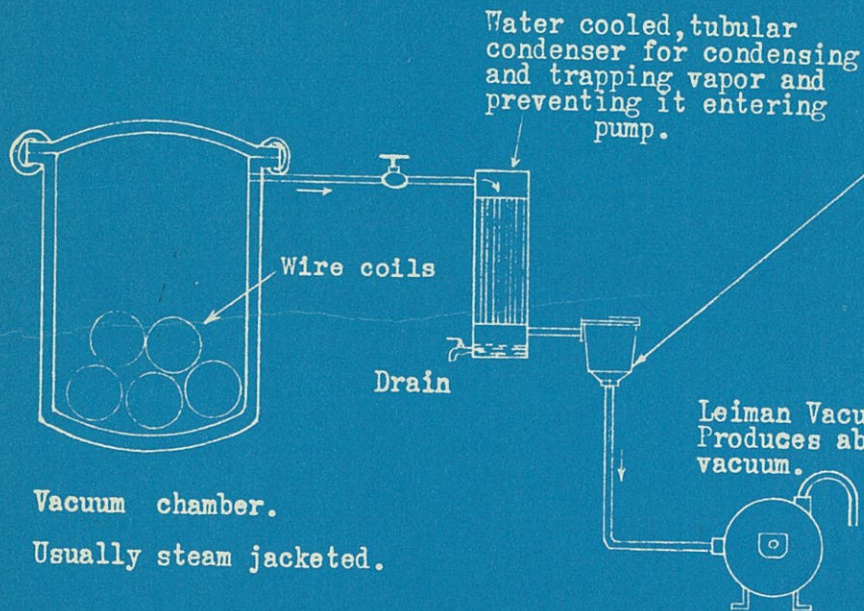


ANGLE BARS FOR PRINTING PRESSES



About 5 pounds air pressure prevents the paper from contacting the angle bar and causes it to float over the bar. This prevents smudging of the wet ink.

VACUUM DRYING
of wire coils, transformers, etc.

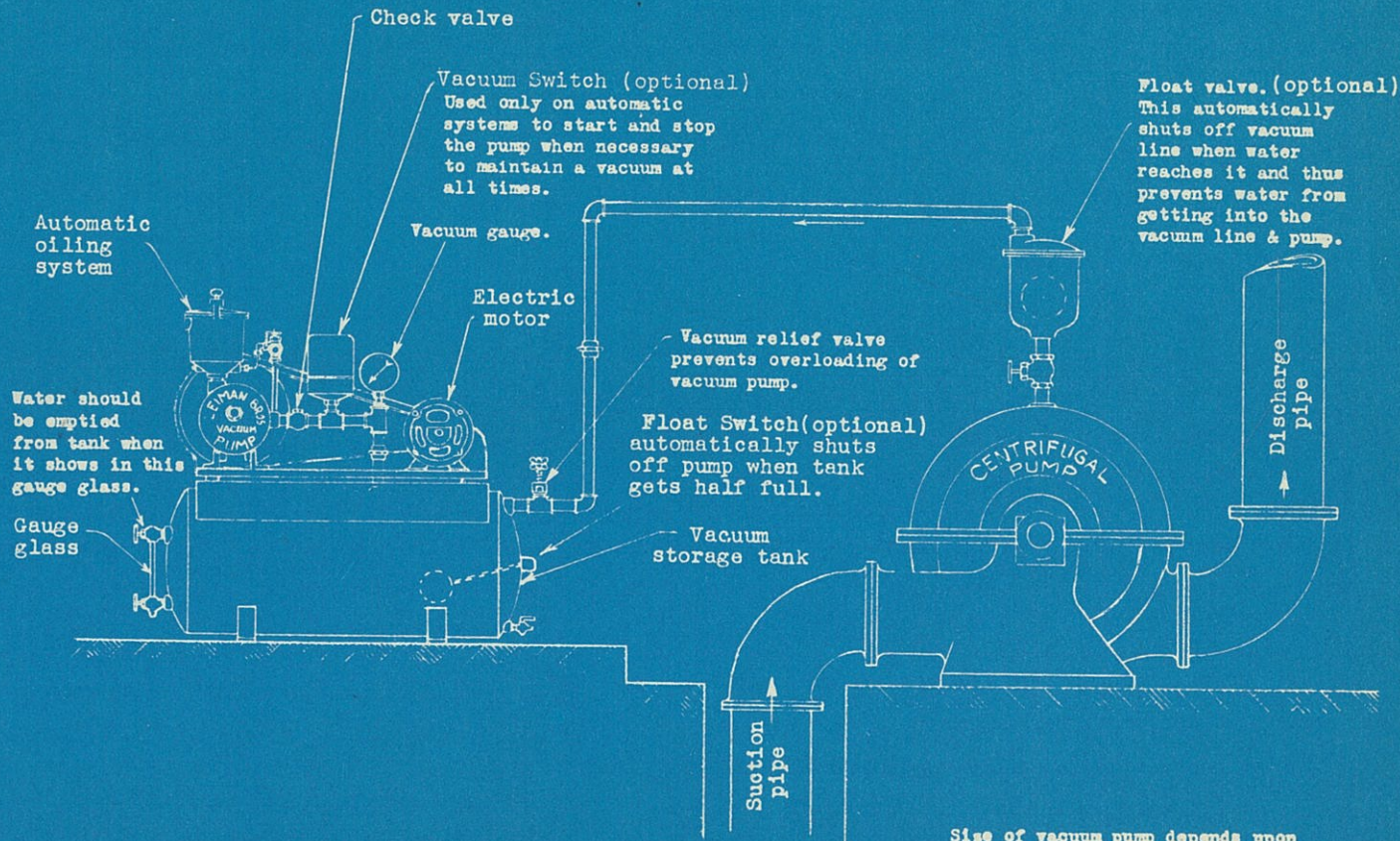


As an extra precaution
a Leiman separator can
be installed ahead of
the pump.

Pump operates at about 200
degrees Fahr. to prevent
condensation in pump.

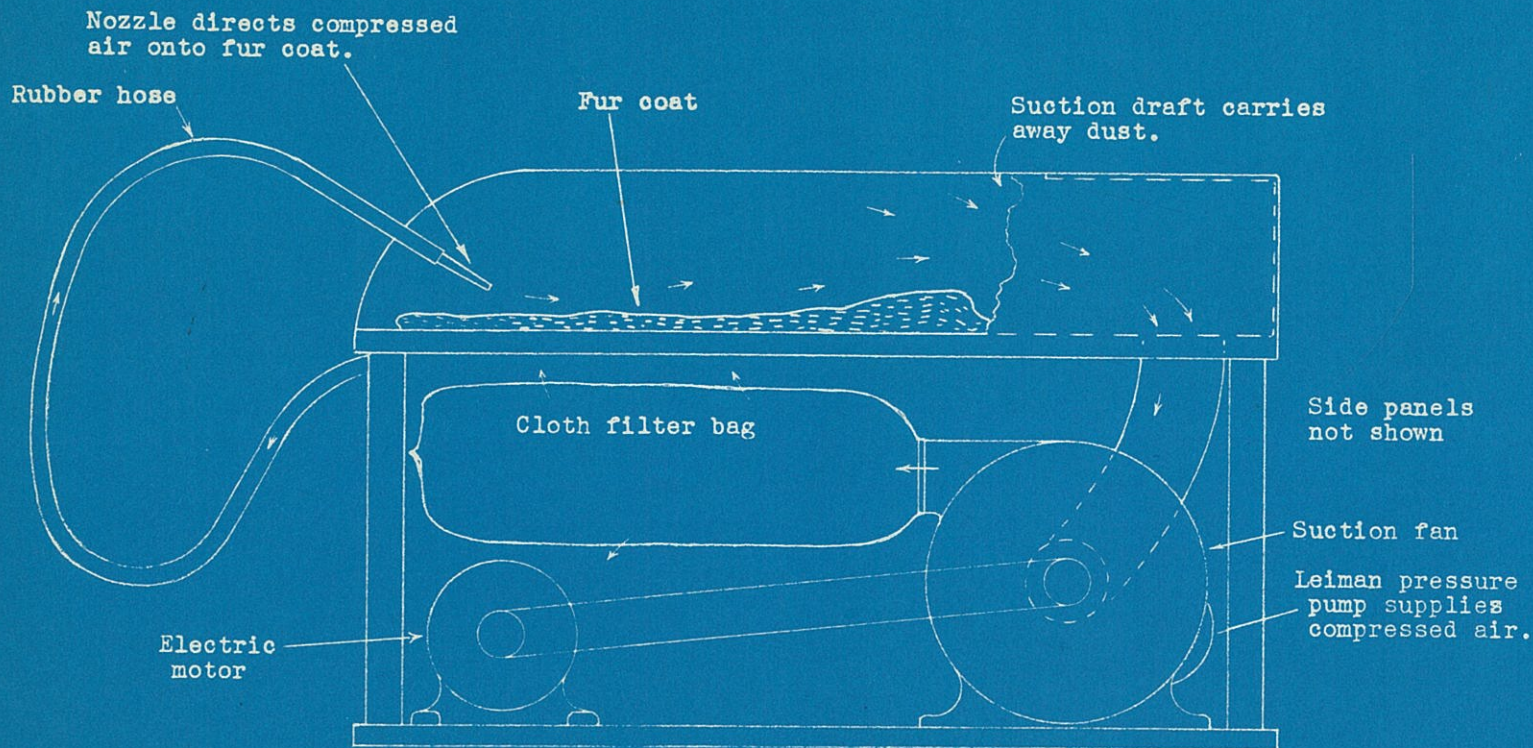
For steady service use a water
cooled pump with just enough
water to keep pump at 200 degrees.
For service of periods not ex-
ceeding $\frac{1}{2}$ hour with rest periods
of at least $\frac{1}{2}$ hour, use air cooled
pump.

WATER PUMP PRIMING SYSTEM.

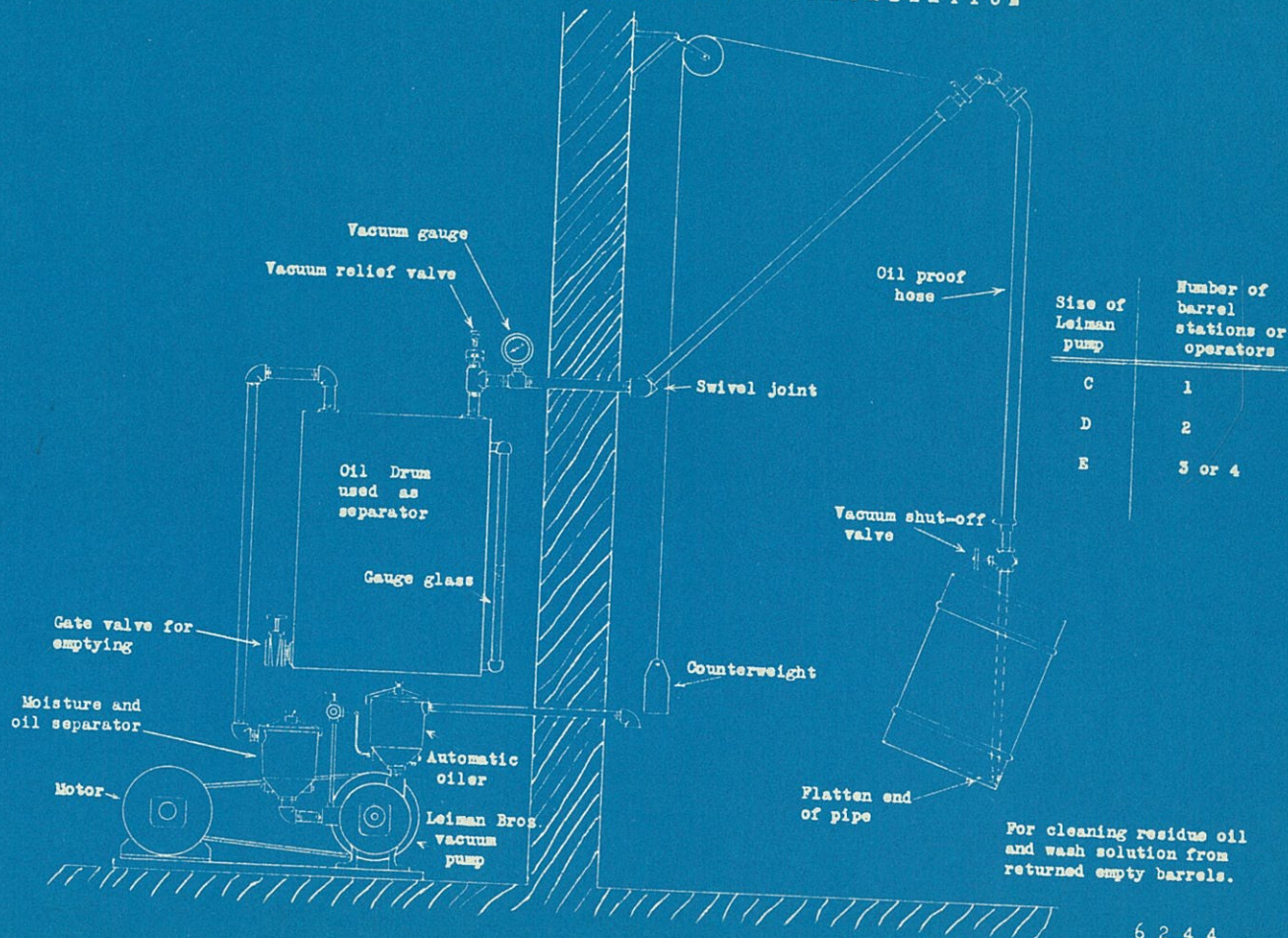


Size of vacuum pump depends upon size of water lift pipe, height of lift and time limit.

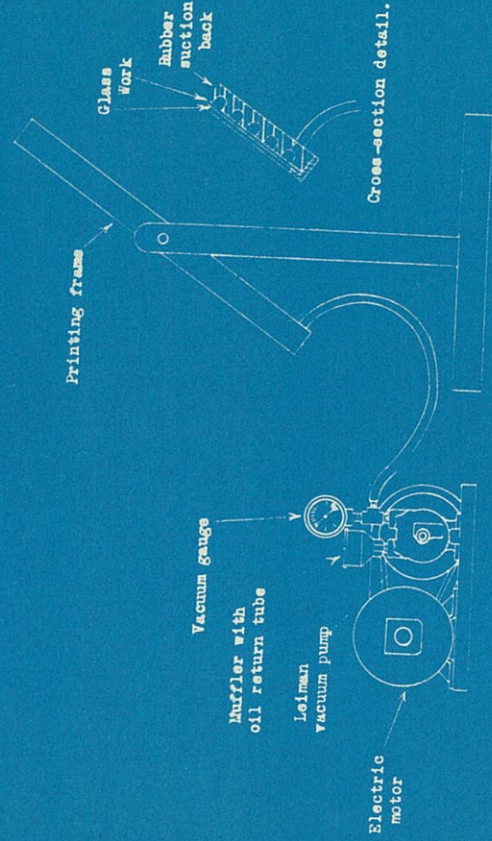
FUR COAT CLEANING OUTFIT.



BARREL CLEANING INSTALLATION



VACUUM PRINTING FRAME



Belt Driven Vacuum Pump Unit.

The V belt drive which is oversize eliminates any trouble with belt slippage. Provision is made for taking up belt slack should it ever become necessary.

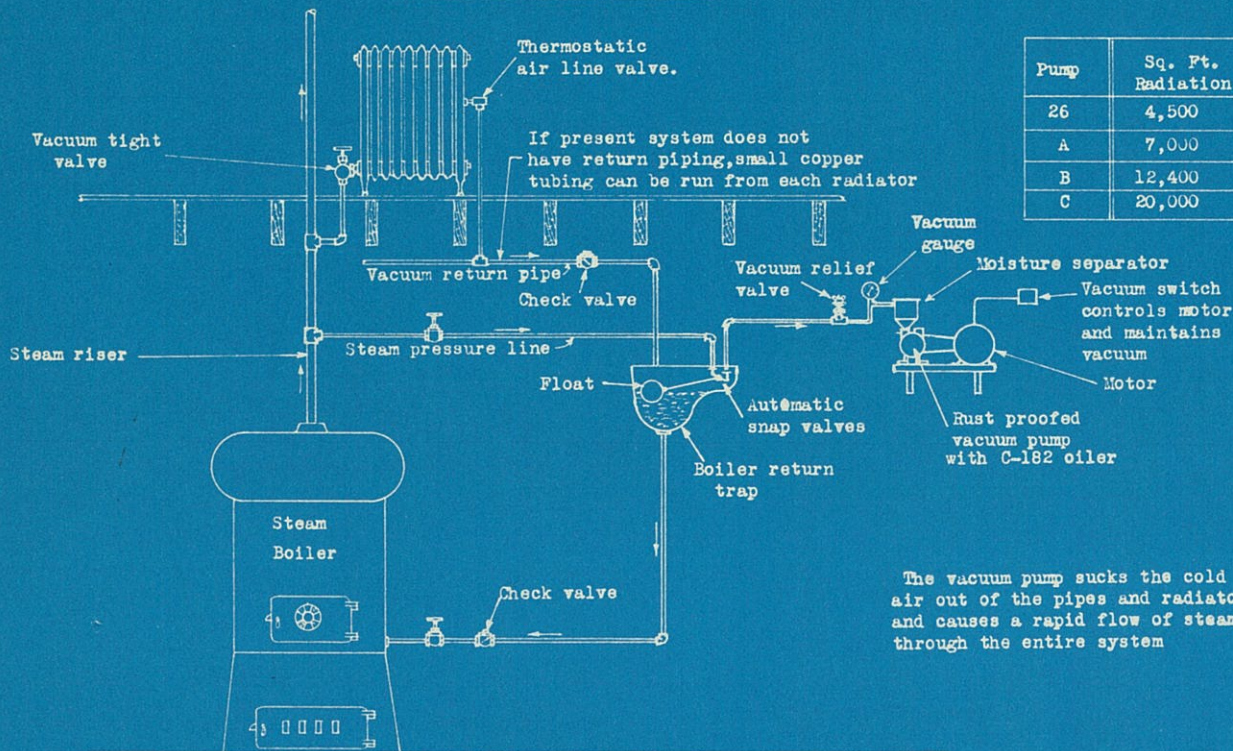
The belt drive permits the pump to run at less than motor speed and permits it to run quieter and cooler.

The muffler on the outlet of the pump muffles the sound of the air coming from the pump outlet and also absorbs oil vapor. Any oil which is trapped in the muffler is drained back to the oil cup.

This pump will produce a very high vacuum (about 27") which will keep the work tight against the glass.

The #26-1½ vacuum pump driven by a 1/3 h.p. motor will take care of any frame up to about 56" x 48". As it will take a few seconds longer to build up a vacuum on the larger size frames, a larger size pump is sometimes used.

VACUUM HEATING SYSTEM.



| Pump | Sq. Ft. Radiation |
|------|-------------------|
| 26 | 4,500 |
| A | 7,000 |
| B | 12,400 |
| C | 20,000 |

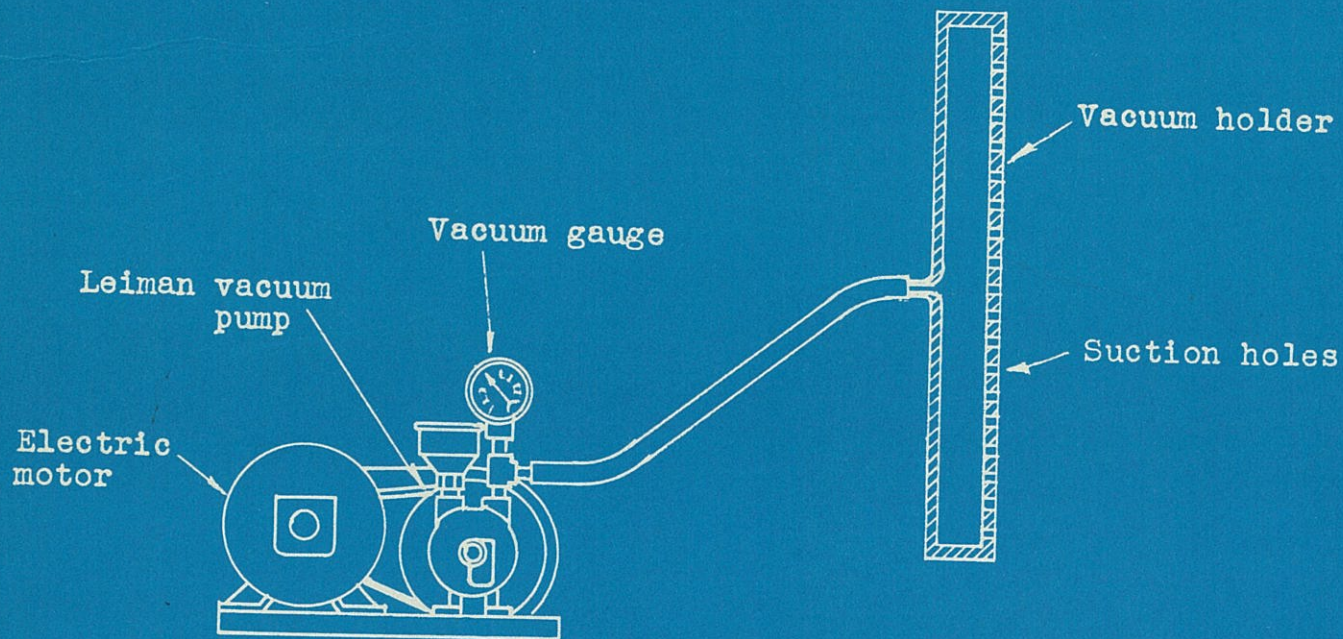
The vacuum pump sucks the cold air out of the pipes and radiators and causes a rapid flow of steam through the entire system

It is very important that good thermostatic air valves be used at each radiator so as to prevent escape of steam, otherwise the return trap will fill up quickly and steam will get into vacuum pump.

A hot return line denotes a leaky air valve.

A vacuum system insures rapid heating of all radiators.

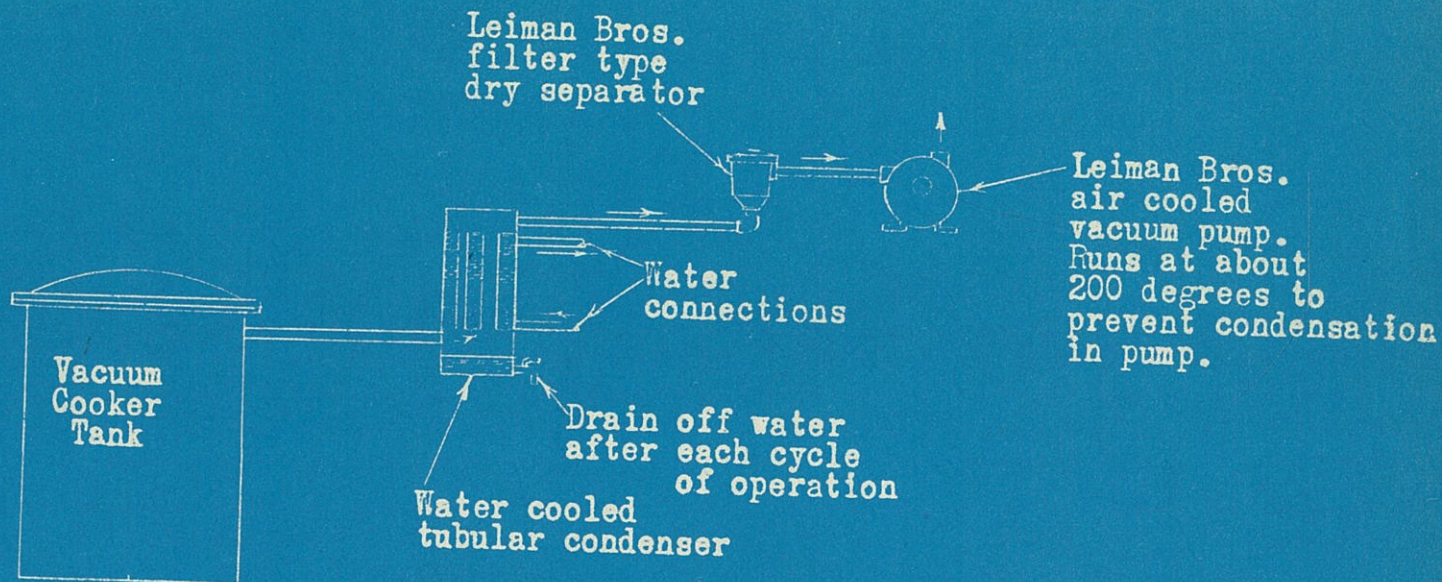
VACUUM CAMERA BACK OR COPY HOLDER BOARD.



This pump will produce a very high vacuum (about 27") which will keep the work or film tight against the holder board.

6253-A

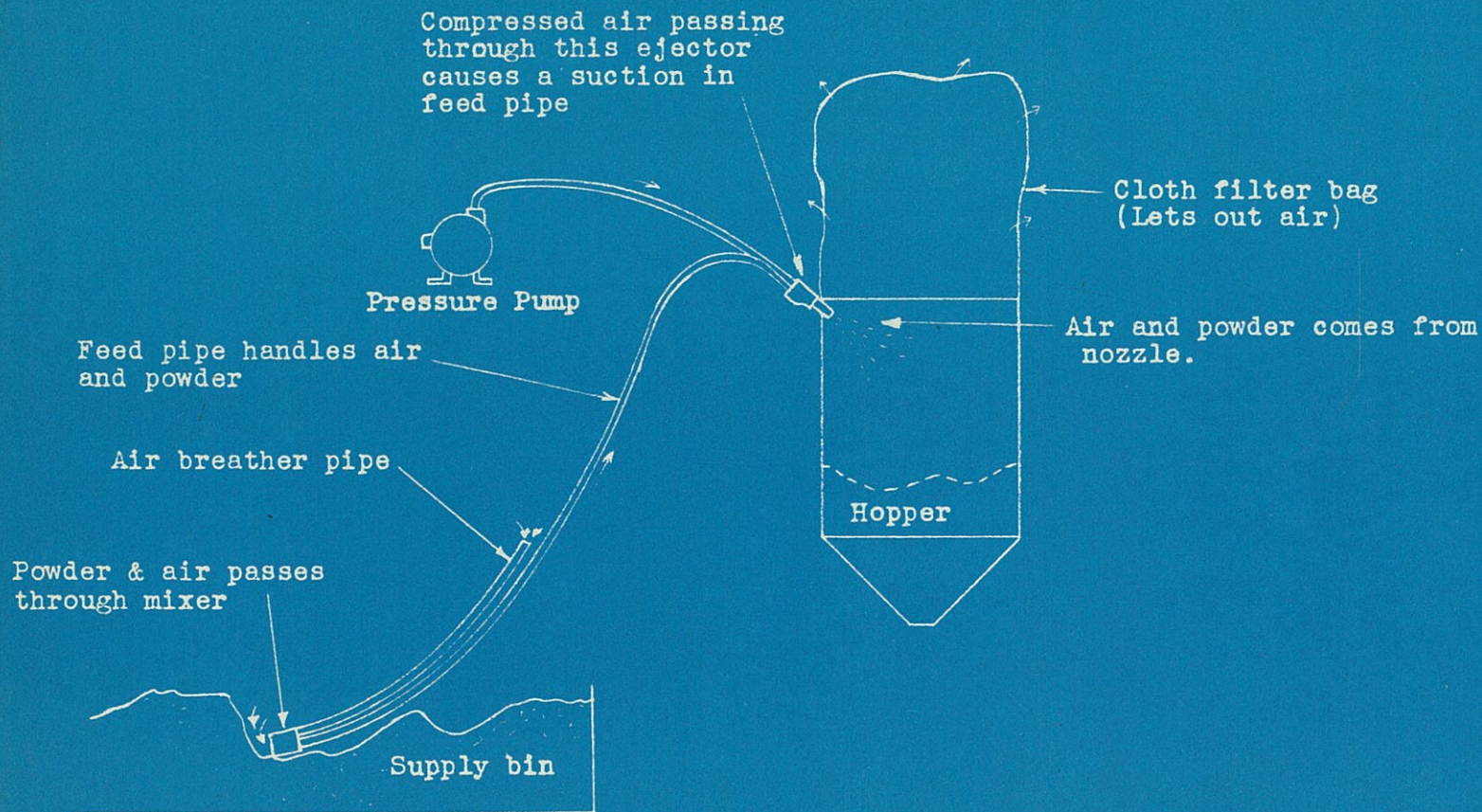
VACUUM COOKER DEHYDRATER.



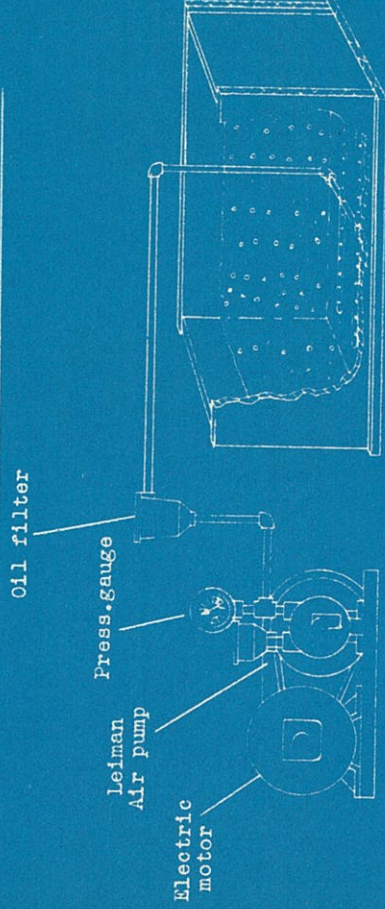
By holding a vacuum on the cooker, foods or other substances can be cooked or dehydrated at a low temperature far below the usual boiling point.

Vapor given off is condensed and trapped in watercooled condenser and kept from entering dry vacuum pump.

POWDER CONVEYING.



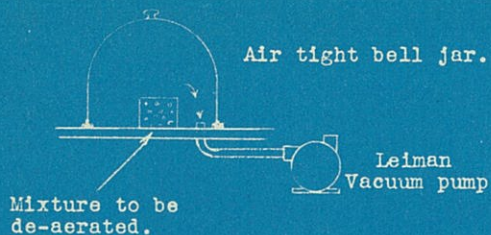
AGITATING CHEMICAL SOLUTIONS, LUBRICATING OILS, ETC. AERATING AQUARIUMS.



Drilled pipes distribute air bubbles

Air pressure depends upon depth of solution and specific gravity of solution.

| Surface area of tank in square feet | Approximate size of pump required. |
|--|---------------------------------------|
| 10 | # 26-1½ |
| 13 | A |
| 23 | B |
| 41 | C |
| 67 | D |
| 167 | E |



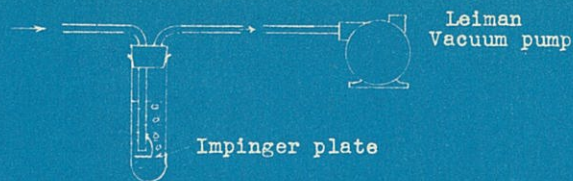
A high vacuum pulls the air out of wet mixtures such as putty, plaster, etc.

DE-AERATING.



For use in operating rooms. Air is forced to bubble through a jar of ether or other anesthetic and vapor is carried to patient.

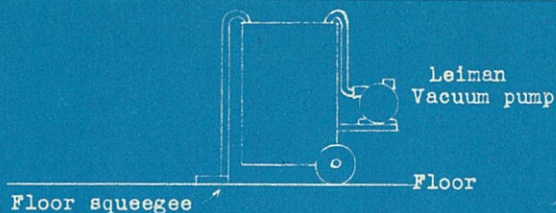
ETHERIZING.



For testing the dust content of air in work rooms the dust laden air is sucked through a water filled test tube and the dust collected on the impinger plate is examined under a microscope.

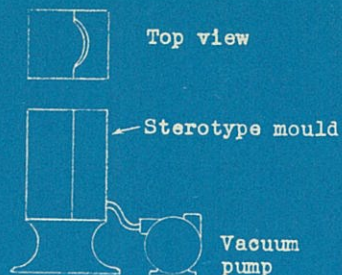
Full instructions are given by the U.S. Dept. of Health.

DUST IMPINGER



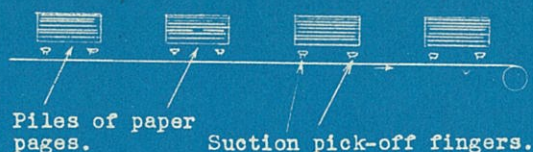
Soapy water from washing of floors is forced in front of rubber squeegee and a suction tube then sucks it up into collection tank.

FLOOR SCRUBBING.



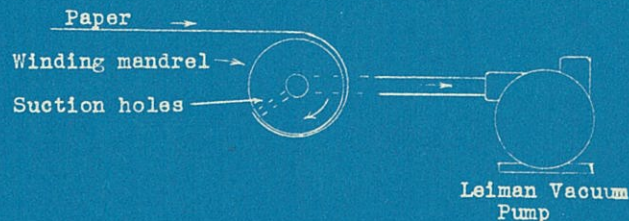
Matrix is held in
mould by vacuum while
molten lead is cast.

STEROTYPE CASTING.

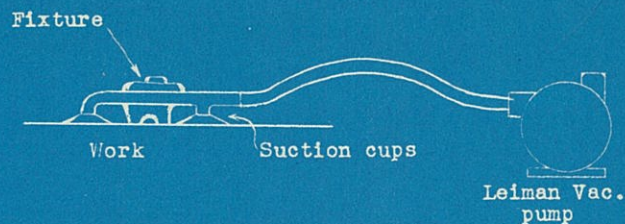


Different pages are picked off different
piles and assembled to make a book.

GATHERING MACHINE.



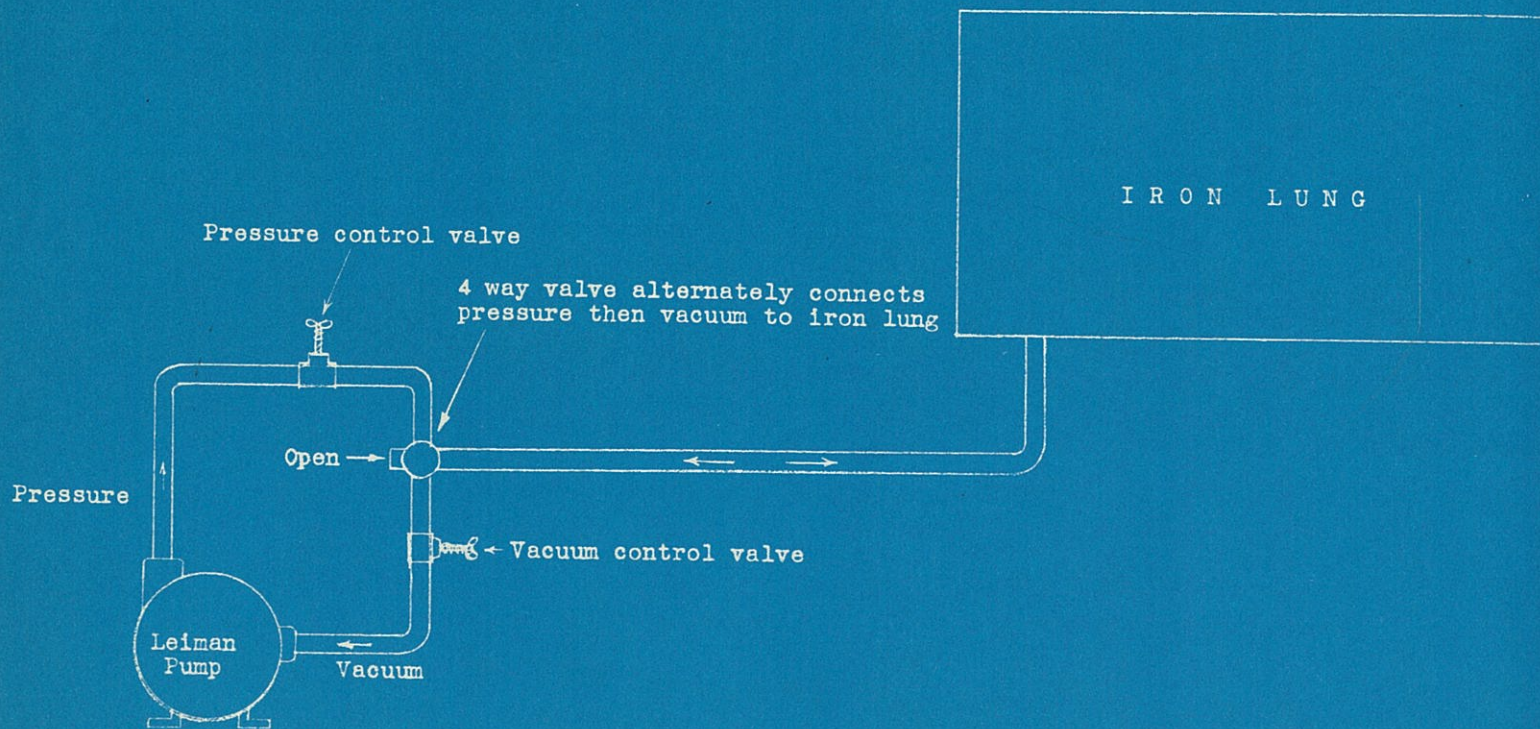
PAPER TUBE MAKING



Fixture or jig can be held in contact with
work by suction until operation is completed.
Fixture can be quickly moved from spot to
spot.
Eliminates clamps, magnets or drilled holes.

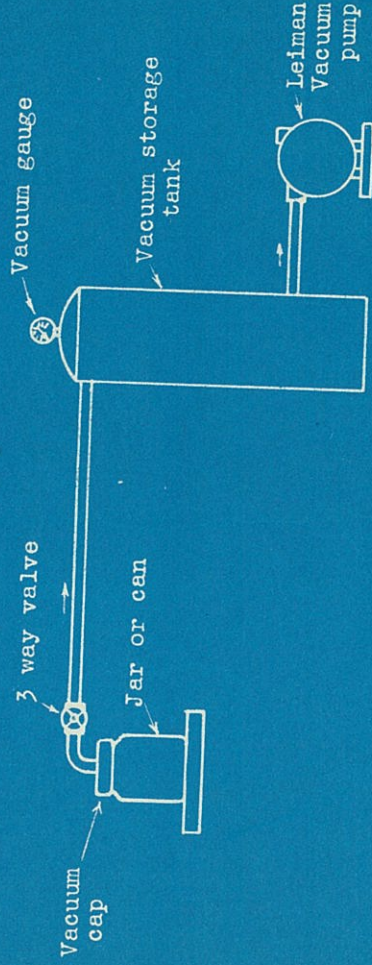
FIXTURE HOLDER

IRON LUNG APPLICATION

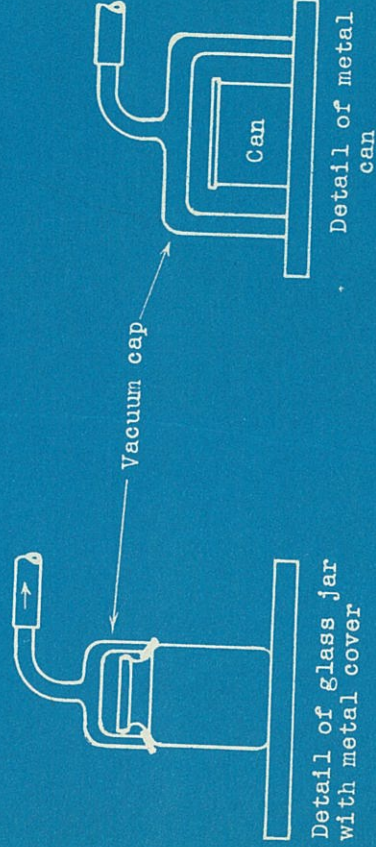


6 2 8 7

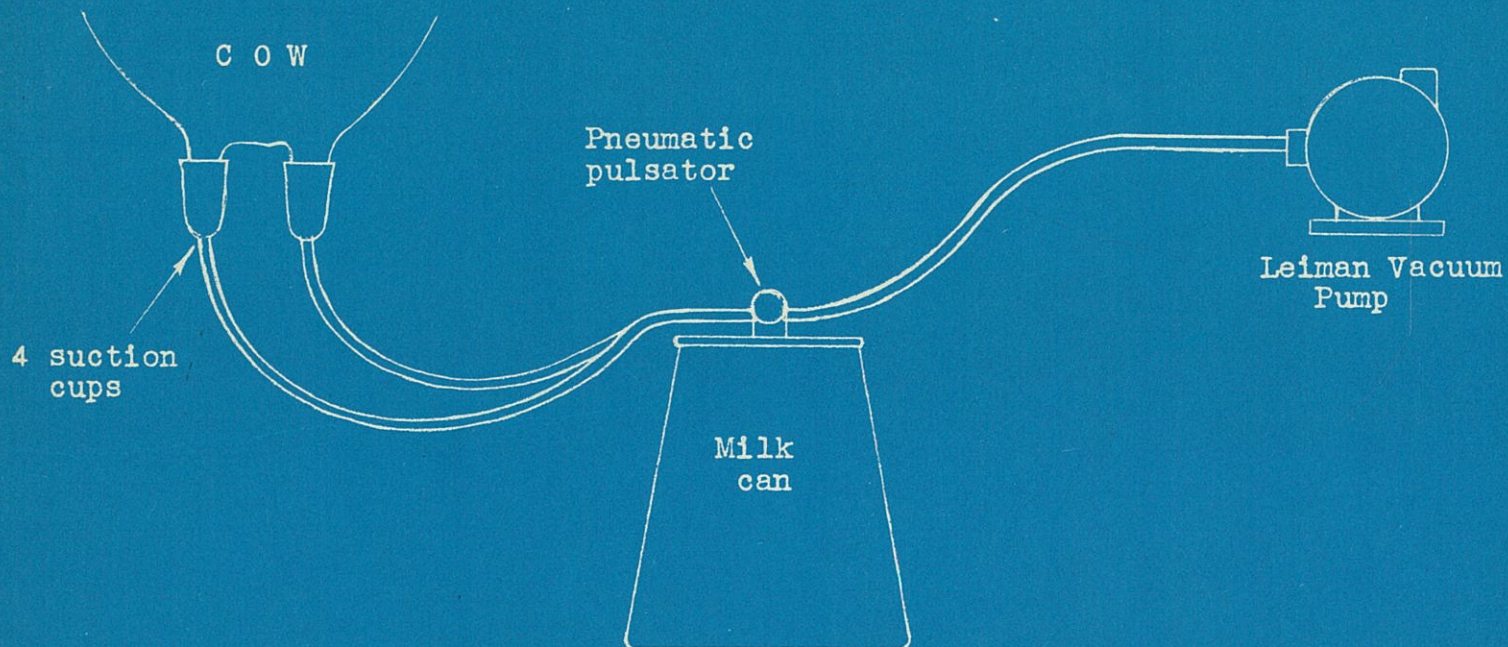
VACUUM CANNING AND PACKING OF FOODS.



The vacuum pump maintains a high vacuum in the storage tank ready for instant use. After the food is placed in the can or jar the cover is laid on top and then the vacuum cap is placed on the jar. The three way valve is opened and the vacuum removes all air from the jar. When the 3 way valve is turned the vacuum is quickly broken and the vacuum in the jar pulls the cover down tight.



VACUUM MILKING MACHINE



Two tubes lead to each teat. One tube is for milk and other tube is for air. Vacuum alternates from one tube to the other, producing a natural milking action on each teat.